REPORT

Supplemental Remedial Investigation Former IFG Facility and Ley Creek Deferred Media

General Motors Corporation
Syracuse, New York

April 2000

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General Motors Corporation
Syracuse, New York

James R. Heckathorne, P.E.
Vice President

April 2000

O'BRIEN & GERE ENGINEERS, INC.

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CERTIFICATION

The on-site observation of the Supplemental Remedial Investigation (RI) activities was performed under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I hereby certify that all the activities that comprised the Supplemental RI were performed in accordance with the Department-approved Final Supplemental RI /FS Work Plan (O'Brien & Gere Engineers, Inc. - October 1999) and modifications agreed upon by the Department as documented herein.

This certification is made to satisfy the requirement set forth at Paragraph III.D of the Order on Consent between General Motors Corporation and the New York State Department of Environmental Conservation (Index # D-7-0001-97-06).

By: ______________________ Date: APRIL 20, 2000

James R. Heckathorne, P.E.
Vice President
O'Brien & Gere Engineers, Inc.

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JAMES R. HECKATHORNE
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LICENSED PROFESSIONAL ENGINEER

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Objectives and overview

The objective of this report is to fulfill the requirements of a Supplemental Remedial Investigation (RI) for the General Motors Corporation (GM) Former Inland Fisher Guide (IFG) Facility (facility) and Ley Creek Deferred Media (collectively designated the site) in Syracuse, New York. The New York State Department of Environmental Conservation (NYSDEC) and GM entered into an Administrative Order on Consent (Index # D-7-0001-97-06; Order), which became effective September 25, 1997. The Order requires GM to conduct a remedial investigation/feasibility study (RI/FS) for the site. The Former IFG Facility was classified by NYSDEC as a Class 2 Site in the New York State (NYS) Registry of Inactive Hazardous Waste Disposal Sites (Registry; Site No. 7-34-057). The Ley Creek Deferred Media includes ground water underlying the Ley Creek PCB Dredgings Site, a Class 2 Registry site (Site No. 7-34-044), and surface water and sediment in Ley Creek between Townline Road and Route 11.

The Ley Creek Deferred Media are being evaluated as part of the RI/FS process under the Order because NYSDEC deferred to this Order the evaluation of these media from the RI/FS completed for the Ley Creek PCB Dredgings site. However, for purposes of this Report, except where the text indicates otherwise, the reference to site is to the Former IFG Facility.

A significant amount of data related to site environmental conditions has been collected over the past 17 yrs under various regulatory programs and as part of other GM activities. A Preliminary RI/FS Report was developed by O'Brien & Gere Engineers, Inc. (O'Brien & Gere) on behalf of GM for the Former IFG Facility and Ley Creek Deferred Media. The Preliminary RI/FS Report was submitted to NYSDEC, consistent with the requirements of the Order, on October 24, 1997 (O'Brien & Gere 1997).

NYSDEC issued comments on the Preliminary RI/FS Report on March 13, 1998 (Benjamin 1998). GM's responses were submitted to NYSDEC on May 18, 1998 (Hartnett 1998). As a result of NYSDEC's comments regarding additional data needs, a Supplemental RI was conducted for the site, in accordance with the approved Final Supplemental RI/FS Work Plan (O'Brien & Gere 1999a), the provisions of the Order, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA), the United States Environmental Protection Agency's (USEPA's) *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA 1988), and the *National Oil and Hazardous Substances Pollution Contingency Plan* (40 CFR Part 300). Supplemental RI field activities were conducted by O'Brien & Gere in 1998 and 1999.

Sufficient data have been collected at the site to allow for development of a Supplemental Feasibility Study (FS). This document presents a compilation of the environmental site data and serves as the Supplemental RI Report submittal identified in paragraph III.A of the Order. GM will submit an Addendum to the Supplemental RI Report to incorporate the results of an additional investigation to determine the extent of VOC ground water impacts in the deep overburden zone at the eastern and northeastern boundaries of the site and adjacent off-site areas. This investigation will be performed in accordance with a NYSDEC-approved work plan.

Under the Order, GM is to prepare a Supplemental Feasibility Study within 45 days after the receipt of NYSDEC's written approval of the Risk Assessment Report (see paragraph V.A of the Order). The Risk Assessment Report is being developed in a manner that is parallel to the preparation of the Supplemental RI Report. GM's latest risk assessment submission is entitled "Ecological Risk Assessment Problem Formulation Document", and it was forwarded to NYSDEC under cover of GM's letter of April 6, 2000.

Site description and history

The site includes both the Former IFG Facility and the Ley Creek Deferred Media. The Former IFG Facility comprises approximately 65 acres of property located at 1 General Motors Drive in the Town of Salina, Onondaga County, New York. Facility structures include the main manufacturing building, the attached administration building, the primary switch house, powerhouse, the industrial waste treatment (IWT) plant, mold storage (former tank farm) building and bulk handling building. Various paved parking lots and undeveloped areas are present on the property. The facility is bounded to the south by Conrail railroad tracks and a wood pallet recycling facility, to the east and northeast by GM Circle and Townline Road, to the west by a Niagara Mohawk Power Corporation (NMPC) electrical transfer station and to the north by Factory Avenue and an undeveloped area adjacent to Ley Creek. The facility is located in an area zoned for industrial use in the Town of Salina. The area surrounding the facility is generally characterized as highly urbanized.

The Ley Creek PCB Dredgings site is located directly north of the facility and Factory Ave. The Ley Creek PCB Dredgings site consists of the area between Factory Avenue and Ley Creek, extending west from the Former IFG Facility Outfall 003 discharge for approximately 4,000 ft. Ley Creek Deferred Media includes ground water underlying the Ley Creek PCB Dredgings site and surface water and sediment in Ley Creek between Townline Road and Route 11.

Facility background

Historically, the Former IFG Facility was used for the manufacture of metal automotive trim components such as bumpers, grills, wheel disks and hubcaps. More recently, the facility was used for the manufacture of interior and exterior plastic trim components such as bumpers, grills and door panels. The facility began operations in 1952, operating initially as a plating facility and later for the manufacture of plastic automotive components. The facility ceased manufacturing operations in December 1993.

Beginning in 1997, GM implemented a facility cleaning program to decontaminate surfaces and decommission unneeded systems, and this has led to a program to redevelop the Former IFG Facility. The process for site redevelopment is outlined in a Redevelopment Addendum to the Order (effective on November 23, 1999), and for one specific tenancy, in the Stipulation between GM and NYSDEC (effective August 23, 1999). Facility cleaning activities have been, and continue to be, conducted as Interim Remedial Measures (IRMs) under the Order. The completion of the Phase 1 and Initial Phase 2 IRM cleaning work has been documented in a certification report (O'Brien & Gere 2000a). As of April 2000, the redevelopment and the Phase 2 IRM programs are in progress.

Investigative activities

Twenty-five environmental investigations, the majority conducted in accordance with regulatory programs, have been conducted at or near the site. These site investigations, conducted from approximately 1983 to 1999, included the sampling and analysis of soil, ground water, surface water, storm water, sludge, sediment and fish. The following investigations were conducted (referenced dates are associated with actual investigations and not necessarily with associated reports):

- 1983 - Thomsen Associates and Empire Soils Investigations, Inc. (Empire Soils) Hydrogeological Investigation and monthly ground water monitoring, which continued until 1997.
- 1985 EDI Engineering & Science (EDI) Hydrogeological Investigation.
- 1985 EDI Phase II Hydrogeological Investigation.
- 1985 EDI Ley Creek sampling program.
- 1985-1986 - EDI Solvent Spill Hydrogeological Investigation/Remedial Action Plan and bi-weekly ground water monitoring, which continued until 1997.
- 1986-1987 O'Brien & Gere Engineers Hydrogeologic Investigation of Fill Area Along Ley Creek.
- 1987 O'Brien & Gere Engineers Storm Outfall Assessment.
- 1989 O'Brien & Gere Engineers Storm Sewer Sampling Study.
- 1988-1989 - O'Brien & Gere Engineers Surface Impoundment Post-Closure Ground Water Monitoring Program, which continued until 1997.
- 1988-1989 O'Brien & Gere Engineers Ley Creek Dredged Material Area Field Investigation.
- 1990-1991 O'Brien & Gere Engineers Ley Creek Relief Interceptor Sewer Area IRM Sampling Program.
- 1991 Onondaga County Ley Creek Relief Interceptor Sewer Area Sampling Program.
- 1992 O'Brien & Gere Engineers Ley Creek Dredged Material Area RI.
- 1993 O'Brien & Gere Engineers storage cell confirmation sampling program (related to soil storage during 1993 IRM).
- 1994 Entrix, Inc. (Entrix) Phase I Environmental Site Assessment (ESA).
- 1995-1996 Conestoga-Rovers & Associates (CRA) Phase II ESA.

- 1996 NMPC Factory Avenue soil sampling.
- 1996 O'Brien & Gere Engineers utility pole location sampling program.
- 1995-1996 O'Brien & Gere Engineers Outfall 004 sewer line sampling program.
- 1999 O'Brien & Gere Engineers Supplemental RI sampling program.

The following additional investigatory data provided by NYSDEC were also incorporated into the RI:

- 1996 NYSDEC Sampling.

Based on correspondence with NYSDEC (Benjamin 1999 and Hartnett 1999a), it was agreed that the following data generated for the site would be included in this report:

- soil data generated between 1983 and 1999
- ground water data generated from the July and November 1999 former thinner tank area quarterly monitoring, the November 1999 surface impoundment semiannual monitoring, and the August and November 1999 Supplemental RI sampling
- surface water data generated from the 1996 NYSDEC sampling and the 1998 and 1999 Supplemental RI sampling
- sediment data generated from the 1996 NYSDEC sampling and the 1998 Supplemental RI sampling
- fish tissue data generated between 1993 and 1999.

In order to present the most current ground water environmental evaluation, ground water discussions are limited to the latest rounds of ground water sampling. Historical ground water conditions are discussed in the 1997 Preliminary RI/FS Report (O'Brien & Gere 1997).

Hydrogeologic conditions
The site is located within the Erie-Ontario Lowlands Physiographic Province (Ontario Lowland) of New York State and has generally flat topography. Site overburden consists of fill, glaciolacustrine deposits, and lodgement till underlain by red shale bedrock. A generalized geologic cross-section is

provided as Figure 3-2. The fill is loose to dense and ranges in thickness from 1 to greater than 16 ft, being thickest in the northwestern area of the site. Glaciolacustrine deposits located beneath the fill consist primarily of silt and fine sand with discrete clay layers, with thickness increasing northeast across the site from 7 to 28 ft. In the northern portion of the site the glaciolacustrine deposits can be divided into an upper, middle and lower unit. The upper unit consists predominantly of silt and fine sand and varies in thickness from approximately 4 to 14 ft. The middle unit consists predominantly of silt and clay. The middle unit originates near the northern edge of the manufacturing building and is continuous in the northern portion of the site. The middle portion varies in thickness from approximately 5 to 15 ft. The deeper portion consists of silt and fine sand. Sand and gravel lenses were noted at isolated locations at the interface between the glaciolacustrine deposits and the till. The thickness of this layer varies from .5 to 11 ft. Lodgement till consists of very dense silt with embedded gravel of varying thickness overlying the bedrock. As shown in Figure 3-1, the top of the till slopes to the northeast towards monitoring well OBG-6D. The slope of the till surface appears to control the direction of migration of volatile organic compounds (VOCs) detected in the ground water at the site.

Ground water is encountered between 3 and 13 ft below ground surface at the site. The saturated portions of the fill and glaciolacustrine units comprise the unconfined overburden aquifer. The overburden overlies the lodgement till unit which limits hydraulic connection between the overburden and bedrock. The approximate upper 15 ft of the saturated overburden has been designated the shallow overburden aquifer zone, which encompasses the saturated portion of the fill and upper glaciolacustrine unit. The deep portion of the aquifer is not present in the southern portion of the site due to the shallow depth to till. The deep aquifer zone starts near monitoring well MWI-3 and is located in the lower glaciolacustrine unit that encompasses the approximate 10 ft immediately above the lodgement till. The classifications were developed to evaluate ground water quality in the two zones and discuss variations in ground water flow regimes.

As indicated on Figure 3-3, the shallow overburden ground water flow direction is northeast across the site toward Ley Creek with an average hydraulic gradient of 0.009 ft/ft. Using an average porosity and a range of measured hydraulic conductivity, the shallow ground water flow velocity range was estimated to be 0.07 to 16.4 ft/year. As indicated on Figure 3-4, deep overburden ground water also flows towards the northeast, and has an average hydraulic gradient of 0.01 ft/ft. The deep ground water flow velocity range was estimated to be 0.44 to 32.5 ft/yr. Ground water discharge at the facility in the shallow overburden was estimated to be between 15 and 3553 gal/day, and in the deep overburden the flow was estimated to be between 64 and 4667 gal/day. Vertical permeability was determined to be one to three orders of magnitude lower than the horizontal values for the glaciolacustrine deposits, suggesting that horizontal ground water flow is the preferred path for the overburden at the site.

An upward flow potential exists between the glaciolacustrine deposits and the underlying till. This information suggests that the lodgement till layer behaves as an aquitard in the vicinity of the site.

Soil investigative results
Soil data are described with respect to the following areas at the site: manufacturing building subsurface, IWT plant area, former thinner tanks area, northeast property area, and the northern property area. New York State (NYS) soil cleanup objectives presented in NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4046, *Determination of Soil Cleanup Objectives and Cleanup Levels* (NYSDEC 1995), were used as screening values for comparison to soil concentrations. It should be noted that soil background values were not used during screening. Detected concentrations in soil are illustrated on figures provided in Appendix C. Detected concentrations above screening levels are illustrated in Figures 3-5 through 3-11. Detected concentrations are summarized in Tables 3-5 through 3-11. Additionally, a summary of the constituents detected, above screening levels, in samples associated with each area at the site is provided in Table 3-4.

Manufacturing building subsurface
Polychlorinated biphenyls (PCBs) were detected in soil beneath the manufacturing building above the 10 mg/kg screening level, in the vicinity of the abandoned underground oil collection sumps and tanks and the abandoned storm sewer trenches beneath the facility floor, at concentrations up to 4300 mg/kg. Petroleum hydrocarbons (identified as SAE 30W oil) were detected in soil in the vicinity of the abandoned underground oil collection sumps and tanks at concentrations up to 80,000 mg/kg. Concentrations of chromium (74.5 to 120 mg/kg), nickel (13.70 to 4000 mg/kg), copper (30.0 to 689 mg/kg), and zinc (25 to 52.2 mg/kg) were above screening levels (50, 13, 25, and 20 mg/kg, respectively) at locations adjacent to former electroplating sumps. Concentrations of chromium (74.5 J to 120 J mg/kg), copper (29 to 30.7 mg/kg), nickel (14.4 to 34.1 mg/kg) and zinc (21.2 to 67 mg/kg) were also detected above screening levels in the vicinity of the former oil/water collection sumps. Trichloroethene (TCE), methylene chloride, and 1,2-dichloroethene (1,2-DCE) concentrations were above screening levels (0.7, 0.1, and 0.25 mg/kg (trans), respectively) in the vicinity of the paint room, with detected concentrations ranging as follows:

TCE (0.73 to 150 mg/kg), methylene chloride (0.15 J mg/kg), and 1,2-DCE (0.31 to 5.1 mg/kg). Toluene and xylene were detected at concentrations of 720 and 1.9 J mg/kg, respectively, above screening levels of 1.5 and 1.2 mg/kg, respectively, in the former compactor area. Detections above screening levels are presented in Figures 3-5A, 3-5B, and 3-5C.

Southeast property area
PCBs, several semivolatile organic compounds (SVOCs) and metals were detected above screening levels in surface soil samples collected from the general storage area, at the following concentrations: PCBs (8 J mg/kg), benzo(a)anthracene (0.27 J mg/kg), benzo(a)pyrene (0.11 J mg/kg to 0.37 J mg/kg), benzo(b)fluoranthene (0.32 J mg/kg to 0.72 J mg/kg), benzo(k)fluoranthene (0.23 J mg/kg), chrysene (0.52 J mg/kg), and site-related metals arsenic (92.80 to 162 mg/kg), copper (38 mg/kg to 60.3 mg/kg), nickel (20.3 mg/kg and 54 mg/kg), and zinc (53.1 mg/kg and 892 mg/kg). In addition to site-related metals, beryllium (0.66 J mg/kg) and iron (23,700 mg/kg) were also detected above screening levels.

Benzo(a)pyrene (0.13 J mg/kg), benzo(b)fluoranthene (0.26 J mg/kg), nickel (13.9 to 26.9 mg/kg), and zinc (31.9 to 53.1 mg/kg) were also detected above the respective screening levels in samples collected from beneath the parking lot in this area. Detections above screening levels are presented in Figures 3-6A, 3-6B, and 3-6C.

Industrial waste treatment plant area
PCBs were detected at concentrations above the screening level of 1 mg/kg in surface soils in the IWT plant area at concentrations ranging from 2 J to 3900 mg/kg. In addition, PCBs were detected above the screening level of 10 mg/kg for subsurface soil in one soil boring location at 190 mg/kg, in the vicinity of the former fuel oil tanks. Several SVOCs were detected above the screening levels in surface soil in the IWT plant area, at the following concentration ranges: benzo(a)anthracene (0.33 J to 12 J mg/kg), benzo(a)pyrene (0.077 J to 8.4 mg/kg), benzo(b)fluoranthene (0.31 J to 12 J mg/kg), benzo(k)fluoranthene (0.47 J to 3.8 J mg/kg), chrysene (0.41 J to 18 J mg/kg), indeno(1,2,3-c,d)pyrene (3.5 J to 12 J mg/kg), and phenol (0.041 J to 0.85 J mg/kg). Site-related metals including arsenic, chromium, copper, lead and zinc were detected above the screening levels across the IWT Plant Area at the following concentration ranges: arsenic (13.7 to 27.1 mg/kg), chromium (59.1 to 32,000 mg/kg), copper (37.2 to 4790 mg/kg), lead (717 mg/kg), nickel (14.9 to 6630 mg/kg), and zinc (47.2 to 5880 mg/kg). Beryllium (0.47 J mg/kg) and iron (16,900 mg/kg) were also detected above the screening levels in one sample in this area. Oil & grease concentrations ranged from 80 mg/kg to 440 mg/kg in the IWT plant area

soils. Dioxin detections, when converted to 2,3,7,8-tetrachloro dibenzo-p-dioxin (TCDD) equivalents, were all below the screening level of 1000 ng/kg. 2,3,7,8-TCDD equivalents ranged from 10 to 916.41 ng/kg. Detections of constituents detected above screening levels in this area are presented in Figures 3-7A, 3-7B, and 3-7C.

Former thinner tanks area
Concentrations of toluene, ethylbenzene and/or xylene were detected above screening levels (1.5, 5.5, and 1.2 mg/kg, respectively) in soil in the former thinner tanks area. Detected concentrations above screening levels of toluene ranged from 1.92 to 720 mg/kg; detected ethylbenzene concentrations above screening levels ranged from 6.40 to 61 mg/kg; and detected xylene concentrations above screening levels ranged from 1.23 to 330 mg/kg.

Several SVOCs were detected at concentrations above the screening levels in one subsurface soil sample collected from the vicinity of the transformer/switch house at the following concentrations: benzo(a)pyrene (0.63 to 110 J mg/kg), benzo(b)fluoranthene (0.86 to 140 J mg/kg), anthracene (170 J mg/kg), benzo(a)anthracene (0.77 to 150 J mg/kg), benzo(g,h,i)perylene (130 J mg/kg), benzo(k)fluoranthene (0.34 J to 59 J mg/kg), chrysene (0.82 to 170 J mg/kg), dibenzo(a,h)anthracene (0.18 J to 65 J mg/kg), dibenzofuran (12 J mg/kg), fluoranthene (560 mg/kg), indeno(1,2,3-c,d)pyrene (76 J mg/kg), phenanthrene (450 mg/kg), and pyrene (480 mg/kg). Similarly, several SVOCs were detected above screening levels in surface soil in the vicinity of the transformer/switch house at the following concentrations: benzo(a)pyrene (0.18 J to 300 J mg/kg), benzo(b)fluoranthene (0.24 J to 360 J mg/kg), anthracene (230 mg/kg), benzo(a)anthracene (350 J mg/kg), benzo(g,h,i)perylene (310 J mg/kg), benzo(k)fluoranthene (120 J mg/kg), chrysene (380 mg/kg), dibenzo(a,h)anthracene (39 J mg/kg), dibenzofuran (21 mg/kg), fluoranthene (1200 mg/kg), fluorene (65 mg/kg), indeno(1,2,3-c,d)pyrene (190 J mg/kg), phenanthrene (670 mg/kg), and pyrene (1000 mg/kg). Site-related metals including nickel (18.2 mg/kg) and zinc (56.8 mg/kg), and metals beryllium (0.63 mg/kg) and iron (20,500 mg/kg), were also detected above the screening levels in surface soil in the vicinity of the former thinner tanks area. Detections above screening levels are presented in Figures 3-9A, 3-9B, and 3-9C.

Northeast property area
Concentrations of PCBs were detected above the screening level in one surface soil sample at 7 mg/kg and in one subsurface soil sample at 24 J mg/kg. Several SVOCs were detected at concentrations above the screening levels in surface samples at the following concentrations: benzo(a)anthracene (0.28 J mg/kg to 7.7 mg/kg), benzo(a)pyrene (0.22 J mg/kg to 6.9 J mg/kg), benzo(b)fluoranthene (0.34 J mg/kg to 10 J mg/kg), benzo(k)fluoranthene (0.41 J mg/kg to 3.7 J mg/kg), dibenzo(a,h)anthracene (0.17 J mg/kg), and chrysene (0.47 J mg/kg to 8.9 mg/kg). In addition, several SVOCs were detected at concentrations above the screening levels in subsurface samples, at the following concentrations: benzo(a)pyrene (0.64 J mg/kg), benzo(b)fluoranthene (1 J mg/kg), benzo(k)fluoranthene (0.37 J mg/kg), and chrysene (0.74 J mg/kg). TCE was the only VOC detected in subsurface soil at concentrations greater than the screening level of 0.7 mg/kg at concentrations ranging from 0.79 J to 1.5 J mg/kg.

Sample data for one soil boring installed near the acid-alkali bunker (HA-2) indicated nickel at 16 mg/kg which is above the screening level of 13 mg/kg. In addition, copper (25.9 to 65.1 mg/kg), chromium (61.2 mg/kg), nickel (22 to 97.8 mg/kg), zinc (147 to 200 mg/kg), beryllium (0.67 J mg/kg), and iron (21,500 mg/kg) in surface soil, and copper (25.9 mg/kg), nickel (16 J to 66 mg/kg), and zinc (23.5 to 57.9 mg/kg) in subsurface soil were also detected at concentrations above the screening levels in samples collected in the northeast property area. Detections above screening levels are presented in Figures 3-10A, 3-10B, and 3-10C.

Northern property area
PCBs were detected at concentrations above the screening level of I mg/kg for surface soil in the 0 to 1-ft interval of soil borings collected in the general northern property area. PCBs were detected above the 10 mg/kg subsurface screening level in the general northern property area at concentrations up to 25 mg/kg. Site-related metals arsenic (1.7 to 9.9 mg/ kg), chromium (8.5 to 106 mg/kg), copper (8.5 to 62 mg/kg), nickel (14.3 to 50.5 mg/kg), and zinc (21.5 to 212 mg/kg) were also detected above the respective screening levels in samples collected from the general northern property area.

The former drainage swale was visually evident as a black silt layer mixed with some organic matter during the trenching activities, and the approximate location of the former drainage swale is shown in Figures 3-11A, B, C, D, and E. PCBs were also detected above the screening level in the vicinity of a former drainage swale at concentrations up to 6,800 mg/kg (8 ft below surface). TCE (1.2 mg/kg) and chlorobenzene (13 mg/kg) were also detected above the screening levels in the former drainage swale area.

Site-related metals arsenic (7.9 to 12.09 mg/kg), chromium (106 to 34,900 mg/kg), copper (270 to 6,990 mg/kg), nickel (19.3 to 19,700 mg/kg), and zinc (49 J to 4,730 J mg/kg) were also detected in samples collected from the former drainage swale.

PCB concentrations in surface soil samples collected between the Former IFG Facility fence line and Factory Avenue, following installation of the Ley Creek Relief Interceptor sewer, indicated PCB concentrations up to 130 mg/kg, above the 1 mg/kg surface soil screening level. Surface soil samples collected in the former footprint of the soil storage cell located near the northwestern corner of GM's property indicated PCBs ranging from 1.3 to 6.3 mg/kg, above the surface soil screening level.

The limits of the on-site landfill were identified based on visual observation during the trenching activities. Paint sludge, fly ash, and sludge material were observed during the trenching activities. The approximate location of the on-site landfill is shown in Figure 1-10. Surface soil samples collected from the areas of the on-site landfill showed detections of TCE, cis-1,2-DCE, benzo(a)pyrene, benzo(b)fluoranthene, di-n-octyl-phthalate, PCBs (Aroclor 1248), and site-related metals arsenic, chromium, copper, nickel, and zinc, and metals beryllium, iron, and selenium. These constituents were detected at the following concentration ranges: TCE (46 J mg/kg), cis-1,2-DCE (0.34 mg/kg), benzo(a)pyrene (0.16 J mg/kg to 0.37 J mg/kg), benzo(b)fluoranthene (0.25 mg/kg to 0.63 J mg/kg), di-n-octyl phthalate (56 mg/kg), PCBs (0.3 mg/kg to 2,600 J mg/kg), arsenic (2.7 mg/kg to 15 mg/kg), chromium (14.2 mg/kg to 1,770 mg/kg), copper (11.8 mg/kg to 267 mg/kg), nickel (11.8 mg/kg to 443 mg/kg), zinc (25 mg/kg to 394 mg/kg), beryllium (0.94 J mg/kg), and iron (31,200 mg/kg).

Subsurface soil samples collected within the suspected location of the landfill indicated xylene, toluene, ethylbenzene, cis-1,2-DCE, 2-methylphenol, 4-methylphenol, 4-chloro-3-methylphenol, phenol, PCB Aroclors 1242 and 1248, and site-related metals arsenic, chromium, copper, nickel, and zinc, and metals barium, mercury, beryllium, iron, and selenium were also detected above the respective screening levels. These constituents were detected at the following concentration ranges: xylene (110 N mg/kg), toluene (8.8 N mg/kg), ethylbenzene (10 N mg/kg), cis-1,2-DCE (11 mg/kg), 2-methyl phenol (0.11 J mg/kg to 0.44 J mg/kg), 4-methyl phenol (1.6 J to 3.8), 4-chloro-3-methylphenol (0.28 J mg/kg), phenol (0.067 J mg/kg to 0.099 J mg/kg), PCBs (17 mg/kg to 4300 mg/kg), arsenic (4.2 mg/kg to 65.7 mg/kg), chromium (19.1 mg/kg to 17,200 mg/kg), copper (22.1 mg/kg to 23,200 mg/kg), nickel (22.2 mg/kg to 7,940 mg/kg), zinc (52.1 mg/kg to 53,300 mg/kg), mercury (0.033 J mg/kg to 0.16 mg/kg), beryllium (0.95 J mg/kg), iron (45,900 mg/kg), and selenium (2.9 mg/kg).

Constituents detected at concentrations above screening levels in the vicinity of the closed surface impoundments were limited to PCBs (76 mg/kg), nickel (13.1 to 28.5 mg/kg), and zinc (21.4 to 54.3 mg/kg).

Detections above screening levels are presented in Figures 3-11A, 3-11B, and 3-11C.

Southwest property area

PCBs were detected above the screening level for surface soil at concentrations ranging from 2 to 44 mg/kg. SVOCs in surface soil that exceeded NYSDEC TAGM 4046 screening levels included benzo(a)anthracene (0.32 J to 0.66 mg/kg), benzo(a)pyrene (0.37 J to 0.69 mg/kg), benzo(b)fluoranthene (0.64 J to 1.4 mg/kg), benzo(k)fluoranthene (0.31 J mg/kg), chrysene (0.41 J to 0.88 J mg/kg), and phenol (0.065 J mg/kg). Site-related metals chromium (75 to 180 mg/kg), copper (25.8 to 73 mg/kg), nickel (13.1 to 506 mg/kg), and zinc (39.6 to 2,090 mg/kg) also exceeded the screening levels in surface soil. Beryllium (0.45 J mg/kg) and iron (15,000 mg/kg) were also detected above the screening levels in surface soil.

PCBs were not detected in subsurface soil at concentrations greater than the screening levels in the southwest property area. TCE was detected at 2 J mg/kg, above the screening level in subsurface soil. No SVOCs were detected above the screening levels. Site-related metals nickel (14.6 to 18.4 mg/kg) and zinc (28.3 to 38.9 mg/kg) were detected above the screening levels. Detections above screening levels are presented in Figures 3-8A, 3-8B, and 3-8C.

Ground water investigative results

BTEX

Ground water samples were collected during the 1999 Supplemental RI and analyzed for benzene, toluene, ethylbenzene and xylene (BTEX) from the wells in the former thinner tanks area. From 1986 through September 25, 1997 ground water samples were collected twice per month from ten wells as required by the 1986 SPDES Consent Order. Since September 25, 1997, quarterly ground water samples have been collected from fifteen wells, and an additional four wells are sampled annually as required by the 1997 Consent Order. In February 2000, NYSDEC and GM agreed, based on analytical results, to modify the frequency of the monitoring to annually for eight wells in the former thinner spill area (Hartnett 2000b, Benjamin 2000).

In general, xylene has contributed greater than 75% of the total BTEX concentrations in these wells.

Consistent with historical data, the highest concentrations of BTEX detected in November 1999 were at wells T-2 (178,800 μg/L), T-3 (32,100 μg/L), T-4 (64,800 μg/L), T-21 (192,400 μg/L), and T-15 (9400 μg/L) located adjacent to the building. Lower concentrations were detected in wells located radially away from the former thinner tank area, T-21 area and T-15 area.

The lateral extent of the BTEX plume is illustrated on Figure 3-13. The BTEX plume has been defined to the east by reference to OBG-PZ-3 and OBG-PZ-7 where no BTEX was detected, to the west by wells T-6 and T-7, and to the south by well T-1 where 9 μg/L of BTEX was detected. The northern extent appears to be limited by the northern recovery trench.

Chlorinated hydrocarbons
A total of 55 ground water samples were analyzed for chlorinated hydrocarbons using USEPA Method 8021. Concentrations of chlorinated hydrocarbons above NYS Class GA standards have been detected at the facility in both shallow and deep overburden wells and consisted predominantly of TCE and cis-1,2-DCE.

This discussion describes the ground water chemistry from the southern portion of the site to the northern portion of the site, which is consistent with the ground water flow direction.

Chlorinated hydrocarbons in shallow overburden aquifer zone. The data indicate that no VOCs were detected in upgradient monitoring well OBG-11, in the southwest property area. Upgradient monitoring wells U-1S and U-1D were installed in the southeast property area at the miscellaneous storage area. Xylene was detected at U-1S at 31 μg/L, which is above the NYS Class GA standard. The extent of the xylene contamination in this area of the site is limited as xylene was not detected in any other on-site wells, other than in the former thinner tanks area.

Monitoring wells OBG-12 and OBG-13 were installed adjacent to the southern side of the manufacturing building and downgradient of the IWT Plant area. No VOCs were detected in either well which suggests that the IWT Plant area is not a source of VOCs to the ground water. Monitoring well OBG-15, located in the southwest property area immediately adjacent to the manufacturing building and downgradient of the former container storage pad and former tank farm building (mold storage building) contained 277 μg/L of total VOCs, primarily TCE. The information suggests that the mold storage building may be a source of VOCs. Monitoring well WT-3R, located in the southeast portion of the site and near the manufacturing building contained 22 µg/L of total VOCs. The source of VOCs at WT-3R is unknown.

Continuing north, monitoring wells MWI-1 and MWI-2 were installed in the southern portion of the manufacturing building. At MWI-1 the only VOC detected was vinyl chloride at 6 µg/L, and at MWI-2, the total VOC concentration was 60 µg/L. Monitoring well MWI-3 installed in the northern portion of the manufacturing building contained 29,940 µg/L of total VOCs. The likely source of VOCs detected at MWI-3 is near the paint room as evidenced by the elevated VOCs, PID readings and reported odors at soil borings BH-47, BH-49, and BH-9.

In the northwest portion of the manufacturing building (1975 addition), low concentrations of chlorinated VOCs were detected. Total chlorinated VOCs were detected at OBG-PZ-2 and OBG-PZ-3 at 42 µg/L and 17 µg/L, respectively. The source of the chlorinated VOCs in this area appears to be either the paint room area or closed surface impoundment #1.

VOCs were detected in only three wells sampled from wells installed north of the manufacturing building including the northern property area and northwest property area. The detections were noted at OBG-10S, MW-2S and W-11S which indicate that VOCs in the shallow zone are limited to the northern side of the manufacturing building and administration building. The highest concentration was 437 µg/L at W-11S which is consistent with the presence of VOCs in the soil at OBG-TB-36 and OBG-TB-37 in this area.

No VOCs were detected at MW-1S, MW-3S, MW-4S and MW-5S located around closed surface impoundments #1 and #2. This data, in conjunction with the low concentration detected at MW-2S (2 µg/L of total VOCs), indicate that the former surface impoundments are not a source of VOCs.

Along the northern property boundary, adjacent to Factory Avenue, no VOCs were detected in the shallow ground water zone which indicate that no VOCs are migrating off-site in the shallow ground water zone.

Chlorinated hydrocarbons in deep overburden aquifer zone. As previously noted, the increasing depth of the glacial till layer near the northern portion of the manufacturing building results in both shallow and deep ground water zones in the northern portion of the site. The deep ground water zone extends to Ley Creek.

Review of ground water data for wells in the deep zone indicates TCE was the primary VOC detected, with lesser amounts of cis-1,2-DCE and vinyl chloride. The total VOC concentration in this zone ranges from 12 µg/L at OBG-7D to 181,000 µg/L at OBG-10D. A ground water iso-concentration map of the total VOC concentrations in the deep zone is presented as Figure 3-14. The figure illustrates the axis of the plume trends southwest to northeast from monitoring well OBG-10D, which contained 181,000 µg/L of total VOCs, toward monitoring well OBG-6D at the downgradient property boundary, that contained 68,400 µg/L of total VOCs.

Monitoring wells MW-3D, MW-4D, and MW-5D, located approximately 350 ft west of OBG-6D, at former surface impoundment #2 contained total VOCs at concentrations between 17,000 and 37,000 µg/L. The compounds detected are the same as those detected at OBG-10D and OBG-6D, which suggests a similar source.

Since no significant concentrations of VOCs were detected in the shallow ground water zone, it can be concluded that the source of VOCs to the deep ground water zone is from the manufacturing building, likely near MWI-3 and near soil borings BH-47, B-49, and B-9. The VOCs likely migrate vertically downward in this area and then migrate horizontally within the lenses of the deeper glaciolacustrine unit.

The deeper silt and fine sand layer reflects the topography of the till layer which slopes to the northeast toward OBG-6D. Field screening data further suggests that VOC migration is limited to small lenses.

The northeastern and eastern extent along the axis of the plume is not defined as the total VOCs at OBG-6D was 68,400 µg/L, and no deep wells exist northeast of OBG-6D. Total VOC concentrations in monitoring wells located west of OBG-6D are significantly lower, ranging from 12 µg/L to 3,250 µg/L. The source of VOCs in the northwestern area may originate from the manufacturing building.

Semivolatile organic compounds
SVOCs detected in the ground water were limited to bis(2-ethylhexyl) phthalate, diethylphthalate and 2,4-dimethylphenol. The phthalate compounds are common plasticizers, and their presence may be associated with sampling or laboratory artifacts.

The compound 2,4-dimethylphenol was detected only at monitoring well OBG-9S at a concentration of 4 µg/L, which is slightly above the ground water standard of 1 µg/L. In summary, the data indicate that no significant concentrations of SVOCs were detected in the ground water.

PCBs
PCB concentrations above the NYS Class GA standard detected at the site in both shallow and deep overburden wells consist mainly of Aroclors 1242 and 1248. In summary, samples collected from 16 of the 42 wells contained PCBs at concentrations above the current NYS Class GA standard of 0.09 μg/L for PCBs. The highest concentrations of PCBs were detected in six shallow monitoring wells and two deep monitoring wells. These wells were installed in the following source areas: surface impoundment #2, the on-site historic landfill, the former drainage swale, and the abandoned storm sewer associated with oil/water collection sump 5. The concentrations in ground water at these locations ranged from 2 to 18 μg/L. Soil in these areas was also found to contain PCBs at concentrations up to 4,300 mg/kg (abandoned line leading to oil/water collection sump 5), 2,600 mg/kg (on-site landfill), and 6,800 mg/kg (former drainage swale). Concentrations at the remaining 10 wells were between 0.09 and 0.9 μg/L.

Metals
No metals were detected at concentrations above the NYS Class GA standards in the 42 wells sampled in 1999. The data indicate that the facility is not a source of metals to the ground water.

Ley Creek Deferred Media ground water
With the exception of methylene chloride in OBG-5 (5 μg/L), zinc in OBG-4 (2.28 mg/L), and PCBs in OBG-4 (0.5 NJ μg/L), no constituents were detected above Class GA standards in ground water samples collected from the ground water underlying the Ley Creek PCB Dredgings Site (Ley Creek Deferred Media).

Storm water investigative results
The storm sewer system at the facility comprises piping associated with surface water discharge outfalls designated 003 and 004. The storm sewer system in the immediate vicinity of the manufacturing building and in the majority of the northern property area drains to Outfall 003, and is referred to as the main storm sewer system. The main storm sewer system drains precipitation runoff from the facility ground and roof. Since September 25, 1997, the effective date of the new State Pollutant Discharge Elimination System (SPDES) permit, the main storm sewer system also receives IWT plant treated effluent in accordance with the SPDES permit. The southeastern corner of the property and portions of the parking lot areas east of the facility drain to Outfall 004; this system is referred to as the eastern storm sewer system. Both Outfalls 003 and 004 discharge to Ley Creek under the terms of the September 25, 1997 SPDES permit.

Main storm sewer system
Constituents detected in the main storm sewer system tributary to Outfall 003 in 1987 included PCBs, VOCs (TCE and 1,2-DCE), metals (lead, copper and zinc) and phthalates. A first-flush pattern to storm water pollutant loadings during rain events was observed during the 1987 study.

A 1989 storm sewer sampling program indicated a potential source of PCBs to the storm sewer system on the southwestern corner of the facility, and a PCB contribution to Outfall 003 from the section of storm sewer serving the middle of the facility. It was also concluded that little or no PCBs were originating from off-site, and that there were no influxes of PCBs into the new sections of storm sewer along the west side of the manufacturing building. A source of TCE within the main storm sewer system was generally located on the west side of the manufacturing building.

Routine SPDES monitoring of Outfall 003 since between January 1994 and March 2000 has indicated TCE consistently below its discharge limit (prior to the September 25, 1997 permit) of 160 µg/L, at concentrations ranging from less than detectable to 53 µg/L. The September 25, 1997 SPDES permit contains a final action level for TCE of 5 µg/L for Outfall 003, to become effective three years from the effective date of the Order and SPDES permit. With the exception of September and October 1999, PCB Aroclors 1242 and 1248 have also been consistently detected below their respective discharge limits (prior to the September 25, 1997 permit) of 2 and 4 µg/L, since January 1994, at concentrations ranging from less than detectable to 1 µg/L and less than detectable to 24 µg/L, respectively. In September and October 1999, PCBs were detected at 24 µg/L and 3.6 µg/L, respectively. The September 25, 1997 SPDES permit contains interim discharge limitations of 2 µg/L per Aroclor, and final discharge limitations of 0.3 µg/l per Aroclor, with a discharge goal of non-detect at the higher of 0.065 µg/l or the site-specific method detection limit. The Order requires that the Outfall 003 discharge meet final discharge limitations within the shortest reasonable time period, which shall not exceed three years from the effective date of the Order. Total xylenes have periodically been present in this outfall as well, at concentrations up to 16.8 µg/L in April 1998. The source of the xylenes is likely impacted ground water from the former thinner tanks area on the west side of the facility, which potentially seeps into the storm sewer system. The Order contains an interim action level for total xylenes of 100 µg/L for Outfall 003. The September 25, 1997 SPDES permit contains a final action level for xylenes of 5 µg/L for Outfall 003, to become effective three years from the effective date of the Order and SPDES permit.

Eastern storm sewer system
Constituents detected within the eastern storm sewer system leading to Outfall 004 in 1987 included PCBs, lead, copper, zinc, cyanide (one sample event only), cis-1,2-DCE (one sample event only), tetrachloroethene (PCE) (one sample event only, at the upstream sample point), naphthalene and phthalates.

Televising of the Outfall 004 sewer line for integrity in 1992 showed the Outfall 004 line was not subject to significant ground water infiltration. Sampling of Outfall 004 and portions of the associated storm sewer system in 1995 and 1996 indicated that PCBs were infrequently present in the Outfall 004 discharge. SPDES monitoring between 1994 and 2000 shows PCBs detected infrequently below the final discharge limit (effective in September 2000). Manhole sampling to date has not indicated the source of detections of PCBs in the Outfall 004 discharge.

Ley Creek surface water investigative results
Bis(2-ethylhexyl)phthalate, aluminum, iron, silver and zinc were detected in surface water samples collected in 1996 at concentrations above the Class B surface water standards. Based on data collected during the 1998/1999 Supplemental RI concentrations of detected VOCS, SVOCs, and PCBs did not exceed the NYS Class B surface water standards. Aluminum, iron, and cyanide were the only inorganics detected during the 1998/1999 Supplemental RI at concentrations above the NYS Class B surface water standards.

Ley Creek sediment investigative results
VOCs, SVOCs, PCBs, chlorinated dioxins and furans, and metals were detected in samples collected during the Supplement RI field program. Metals were detected above the NYS sediment criteria in both upstream and downstream samples. There are no sediment screening criteria for the VOCs, SVOCs, PCBs, and chlorinated dioxins and furans detected in the sediment.

The concentrations of Aroclor 1016, Aroclor 1242, and Aroclor 1248 in Ley Creek sediment downstream of the site are statistically greater than upstream levels. However, the concentrations of metals, SVOCs, and VOCs are statistically equivalent with the upstream sediments.

Ley Creek fish investigative results
PCBs were present in fish collected in the vicinity of the site. Quantitative conclusions could not be drawn related to the proportionate contribution by the site to PCBs in fish due to the tendency of the fish collected to migrate for several miles. Aroclors other than those associated with the Former IFG Facility Outfall 003 discharge were detected in fish. In 1992, PCB concentrations in whole fish samples ranged from less than detectable to 1.45 mg/kg. PCB concentrations in fish filets or edible portion samples ranged from 0.11 to 2.4 mg/kg.

Remedial and decommissioning activities
GM conducted several remedial efforts at the facility, generally in conjunction with either a NYSDEC Consent Order or Resource Conservation and Recovery Act (RCRA) closure program, including installation and operation of an oil/water collection system, storm sewer rehabilitation, installation and operation of a ground water recovery system in the former thinner tanks area, surface impoundment closure, and soil excavation/disposal in the area of the Ley Creek Relief Interceptor sewer. Since manufacturing operations at the facility ceased in 1993, GM performed facility decommissioning activities including: coal pile removal, trench drain cleaning, tank removal/closure, surface cleaning, and piping removal. On-going decommissioning efforts include additional piping removal, process system decommissioning, building decontamination, drain/piping cleaning, fly ash hopper demolition, and asbestos abatement.

In addition to these activities, a sewer televising IRM is planned to evaluate the integrity of the storm sewer leading to Outfall 003 and the oil/water separation sumps in the manufacturing building, and their associated piping. Cleaning of the sumps and sewer lines will also be conducted as part of this IRM.

RI conclusions
With the exception of the need for additional delineation of VOCs in ground water in the deep overburden ground water at the eastern and northeastern boundaries of the Former IFG Facility, the nature and extent of contamination at the site has been sufficiently evaluated to begin preparation of the Supplemental FS.

The extent of VOCs in deep ground water east and northeast of the Former IFG Facility will be evaluated as an additional investigatory effort. The results will be presented as an addendum to this report and will be utilized during finalization of the Supplemental FS for the site.

1. Introduction

1.1. Objectives and overview

The objective of this report is to fulfill the requirements of a Supplemental Remedial Investigation (RI) for the General Motors Corporation (GM) Former Inland Fisher Guide (IFG) Facility (site) and Ley Creek Deferred Media in the Town of Salina, New York. As noted below, a portion of the site is also in the Town of DeWitt. The New York State Department of Environmental Conservation (NYSDEC) and GM entered into an Administrative Order on Consent (Index # D-7-0001-97-06; Order), which became effective September 25, 1997. The Order requires GM to conduct a remedial investigation/feasibility study (RI/FS) at the site. The Former IFG Facility was classified by NYSDEC as a Class 2 Site in the New York State (NYS) Registry of Inactive Hazardous Waste Disposal Sites (Registry; Site No. 7-34-057). The Ley Creek Deferred Media includes ground water underlying the Ley Creek PCB Dredgings Site, a Class 2 Registry site (Site No. 7-34-044), and surface water and sediment in Ley Creek between Townline Road and Route 11. The Ley Creek Deferred Media are included as part of the site because NYSDEC deferred to this Order the evaluation of these media, from the RI/FS completed for the Ley Creek PCB Dredgings site.

A significant amount of data related to site environmental conditions has been collected over the past 17 yrs under various regulatory programs and as part of other GM activities. A Preliminary RI/FS Report was developed by O'Brien & Gere Engineers, Inc. (O'Brien & Gere) on behalf of GM for the Former IFG Facility and Ley Creek Deferred Media. The Preliminary RI/FS was submitted to NYSDEC, consistent with the requirements of the Order, on October 24, 1997 (O'Brien & Gere 1997).

NYSDEC issued comments on the Preliminary RI/FS Report on March 13, 1998 (Benjamin 1998). GM's responses were submitted to NYSDEC on May 18, 1998 (Hartnett 1998). As a result of NYSDEC's comments regarding additional data needs, a Supplemental RI was conducted for the site in 1998 and 1999 by O'Brien & Gere in accordance with the approval Final Supplemental RI/FS Work Plan (O'Brien & Gere 1999a), the provisions of the Order, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA), and the United States Environmental Protection Agency's (USEPA's) *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA 1988), and the *National Oil and Hazardous Substances Pollution Contingency Plan* (40 CFR Part 300). This document presents the environmental site data collected during the 1998/1999 Supplemental RI and the data provided in the 1997 Preliminary RI/FS Report and serves as the Supplemental RI Report submittal identified in paragraph III of the Order. In addition, where appropriate, NYSDEC comments on the 1997 Preliminary RI/FS Report are addressed in this document. A tabular summary of the NYSDEC comments on the 1997 Preliminary RI/FS Report is included in Appendix G, along with GM's 1998 responses to the comments and references to the locations of text revisions, where a text revision was proposed.

Sufficient data have been collected at the site to allow for development of a Feasibility Study (FS). This document presents a compilation of the environmental site data and serves as the Supplemental RI Report submittal identified in paragraph III.A of the Order. GM will submit an Addendum to the Supplemental RI Report to incorporate the results of an additional investigation to determine the extent of VOC ground water impacts in the deep overburden zone at the eastern and northeastern boundaries of the site and adjacent off-site areas. This investigation will be performed in accordance with a NYSDEC-approved work plan.

Under the Order, GM is to prepare a Supplemental Feasibility Study within 45 days after the receipt of NYSDEC's written approval of the Risk Assessment Report (see paragraph V.A of the Order). The Risk Assessment Report is being developed in a manner that is parallel to the preparation of the Supplemental RI Report. GM's latest risk assessment submission is entitled "Ecological Risk Assessment Problem Formulation Document", and it was forwarded to NYSDEC under cover of GM's letter of April 6, 2000.

This Supplemental RI report has been organized to present the data and associated conclusions which can be drawn regarding environmental conditions associated with the Former IFG Facility and Ley Creek Deferred Media. This section, Section 1, provides a history of the facility's manufacturing operations and a facility description, a summary of the regulatory issues and programs and a listing of previous environmental investigations. Section 2 of the report provides a discussion of the site investigation activities completed to date, including discussions of sample locations, investigation dates, media sampled, laboratory analysis and field methods and procedures. Section 3 presents the results and findings of the investigatory activities, including site geology, hydrogeology and analytical data for media sampled. Section 4 of the report is a discussion of the various remedial and facility decommissioning programs which GM has implemented over the facility's history as related to environmental issues. Section 5 presents the conclusions of the RI. Relevant support information such as tables and figures, are presented following the sections of report text.

1.2. Site description and history

1.2.1. Property

A site location map is provided as Figure 1-1. The site includes both the Former IFG Facility and the Ley Creek Deferred Media. The Former IFG Facility comprises approximately 65 acres of property located at 1 General Motors Drive in the Town of Salina, Onondaga County, New York. Facility structures include the main manufacturing building, the attached administration building, the primary switch house, powerhouse, the industrial waste treatment (IWT) plant, mold storage (former tank farm) building and bulk handling building. The facility was constructed in 1952 by the Brown-Lipe Chapin Division of GM on undeveloped land as deeded to GM from Gilbert Mautz, Earl Henry Barton and Bessie Galster Hoffman on April 5, 1951.

Various paved parking lots and undeveloped areas are present on the property. These areas surround the main manufacturing building and related outbuildings. Major undeveloped areas consist of areas along the facility's western and northern property boundaries. The facility is bounded to the south by Conrail railroad tracks and a wood pallet recycling facility, to the east and northeast by GM Circle and Townline Road, to the west by a Niagara Mohawk Power Corporation (NMPC) electrical transfer station and to the north by Factory Avenue and the Ley Creek PCB Dredgings site. A facility plan is provided as Figure 1-2.

The facility is currently being redeveloped for tenant use. To date, Reva Plastics, Inc., Carpenter, and New Process Gear occupy space in the building.

The facility is located in an area zoned for industrial use in the Town of Salina; a small portion of the facility (entrance gate area and a portion of the parking lot) is located in the Town of DeWitt. The area surrounding the facility can generally be characterized as highly urbanized. The area is also characterized by a high degree of industrial activity, as evidenced by the presence of manufacturing facilities such as Carrier Corporation, Syracuse China Corporation, New Process Gear and Bristol-Myers Squibb Company. Numerous small industrial businesses are present along Factory Avenue and in nearby areas of the City of Syracuse. Syracuse International Airport-Hancock Field is located approximately 1½ mi north of the facility.

The Ley Creek PCB Dredgings site is located directly north of the facility and Factory Ave. The Ley Creek PCB Dredgings site consists of the area between Factory Avenue and Ley Creek, extending west from the Former IFG Facility Outfall 003 discharge for approximately 4,000 ft. Ley Creek Deferred Media includes ground water underlying the Ley Creek PCB Dredgings site and surface water and sediment between Townline Road and Route 11.

1.2.2. Facility manufacturing operations

General. Historically, the facility was used for the manufacture of metal automotive trim components such as bumpers, grills, wheel disks and hubcaps. More recently, the facility was used for the manufacture of interior and exterior plastic trim components such as bumpers, grills and door panels. The facility began operations in 1952 as the Brown-Lipe-Chapin Division of GM. Operations conducted at the facility included metal die casting; nickel, chromium and copper cyanide electroplating; stamping; polishing; buffing; painting and machining. The products of these operations were the metal automotive parts as previously mentioned. In 1961 Brown-Lipe-Chapin merged with another GM division, Ternstedt, and subsequently became part of GM's Fisher Body Division in 1968. During the early 1960's injection molding operations were added to the existing metal operations. Metal finishing and die casting were subsequently reduced and replaced by injection molding by the early 1970's. The facility operated as the Fisher Body Division until 1984, when it became the Fisher Guide Division until 1989. The facility then operated as the Inland Fisher Guide Division of GM from 1989 until the facility ceased manufacturing operations in December 1993. In 1992, prior to ceasing of manufacturing operations, the facility was operating 127 injection molding machines. After the facility ceased manufacturing operations in 1993, the facility was reassigned to GM's North American Operations Property Management Group, which was later redesignated the Worldwide Facilities Group.

Beginning in 1997, GM implemented a facility cleaning program to decontaminate surfaces and decommission unneeded systems. Subsequent to certifying that certain areas within the manufacturing building were clean (Hartnett 1999b, c, d), GM began redeveloping the manufacturing building for use by various tenants including Reva Plastics, Inc., Carpenter, and New Process Gear. Facility cleaning activities continue as interim remedial measures (IRMs) under the Order, and are being conducted in accordance with a NYSDEC approved work plan (Royal Environmental 1999). Phase 1 and Initial Phase 2 IRMs have been documented in a certification report (O'Brien & Gere 2000a). As of April 2000, the redevelopment and the Phase 2 IRM programs are still in progress. Ownership of the facility is scheduled to be transferred to REALM. REALM will continue to redevelop the facility for reuse.

The following paragraphs provide a description of the major unit operations which were historically conducted at the facility:

Plating operations (1952 to approximately 1973). The approximate locations of the historic plating operations at the facility are presented on Figure 1-3. The plating operations at the facility consisted of the immersion of the parts in an electrically charged solution or bath and subsequent rinsing of parts to remove the clinging film or "drag out" in a rinse tank. The plating units in the manufacturing building, operating in conjunction with the die casting operations, consisted of one plating unit with four process baths in series, each separated by a rinse tank. The baths were copper, nickel, bright nickel and chromium. Prior to IWT plant construction, trenches (up to approximately 18 inches in depth) formed into the concrete surrounding the plating tanks drained to the process sewer system, which tied into the storm sewer outside of the building. As part of IWT plant construction, reinforced concrete plating sumps (typically 5 ft by 5 ft by up to 5 ft depth) were installed to collect plating tank trench drainage, and the reinforced concrete acid/alkali bunker was installed to intercept process sewer flows. Cyanide and chromium plating wastewaters were pumped via overhead piping from the sumps to the IWT plant. Acid/alkali wastewaters were either pumped from the acid/alkali sump through overhead piping to the acid/alkali bunker or the IWT plant, or acid/alkali trenches continued to drain to the process sewer system, which was then connected to the acid/alkali bunker. The sump locations are depicted on Figure 1-3.

Facility personnel have indicated that around 1973, when the plating equipment was removed, the sumps and trenches were either cleaned, filled in with gravel and covered with new concrete or continued to be operated in conjunction with the painting and parts washing operations which were included as part of the ongoing injection molding operation.

Die casting operations (1952 to approximately 1973). The facility's die casting operations were generally performed within one area of the manufacturing building as presented on Figure 1-3. These operations consisted of the operation of reverberatory furnaces to melt ingots and metal trimmings and the use of die casting machines to mold automotive bumpers and grilles. Aluminum and zinc ingots (and scrap zinc alloy trimmings) were melted in one of two furnaces, and the alloy was placed in a heated batch tank near each die cast machine. The alloy was then injected into the die cavity, and the casting was placed into a quench pit for cooling. The part was then trimmed of flash from the area where the die halves met, buffed and plated. The plant used Pydraul PCB hydraulic oil in the die cast machines. In the die cast operations, reinforced concrete quench pits of approximate 10 ft depth were located below the die cast machines for quenching of cast parts. Reinforced concrete sumps were located in each quench pit, and were pumped out for pit clean out. Pit sumps were pumped out to the process sewer system, which connected to the storm sewer system prior to IWT plant construction, and to the acid/alkali bunker and IWT plant following IWT plant construction. Parts went from the quench pits to presses for trimming via a conveyor. Drippings, trimmings from the presses, and off specification parts went into a shaker trench, which consisted of a shaker conveyor, which conveyed the trimmings and off specification parts to a reverberatory furnace, and a reinforced concrete trench (of approximately 1.5 ft depth) underlying the conveyor, which carried the drippings to a 12 in x 12 in x 3 in reinforced concrete sump which led to the storm sewer system. Historic plant drawings indicating the configuration of die cast units within the die cast area, including pits, and shaker and utility trenches are not available. Facility personnel have indicated that in approximately 1973, when the die casting equipment was removed, the sumps and trenches were cleaned, filled in with gravel and covered with new concrete.

Press lines (1952 to approximately 1973). Sheet metal press lines and associated pits were historically operated near the northeast corner of the manufacturing building as presented on Figure 1-3. The press lines were used in the manufacture of wheel disks and hubcaps, and operations consisted of pressing of sheet metal, kneading, buffing, electroplating and painting. The press lines were hydraulically-operated, and trenches were located underneath them for access purposes. In the press line operations, reinforced concrete pits of up to approximately 14 ft depth were located beneath the press lines, and contained air cushions and air bladders. Reinforced concrete sumps were located in each pit, and were pumped out for pit clean out. Pit sumps were pumped out to the process sewer system, which connected to the storm sewer system prior to IWT plant construction, and to the acid/alkali bunker and IWT plant following IWT plant construction. Separate trenches are not recollected by former employees to be part of press line operations. Historic layout drawings for the press line operations were not found during the historic drawing review. Facility personnel have indicated that in approximately 1973, when the press line equipment was removed, the sumps and trenches were cleaned, filled in with gravel and covered with new concrete.

Injection molding operations (1963-1993). Injection molding operations, which started in approximately 1963, comprised the major facility process from the time the plating and die casting equipment was removed in 1973 until the facility ceased manufacturing operations in 1993. Injection molding operations were performed throughout the facility as indicated on Figure 1-4. The injection molders operated by using high temperature and pressure to mold polypropylene pellets into automotive trim components such as bumpers, door panels and miscellaneous parts. The various types and grades of polypropylene pellets were stored in silos located near the southeast corner of the manufacturing building and were then pneumatically conveyed to each injection molder. The pellets were then heated, melted and injected into the molds using high pressure. The resulting part would be removed from the mold.

Several types of injection molders were operated by the facility (*i.e.,* Cincinnati, Battenfield, Van Dorn, Husky) ranging in size from 70 to 220 tons. The injection molders contained hydraulic oil (some containing PCBs) systems which were used to generate the required pressure for the process. Hydraulic oil leakage collected in shallow concrete trenches (of approximately 6 in depth; some cut and others formed) surrounding each injection molder. Prior to implementation of the oil reclamation system, oil was pumped out for off-site disposal. In approximately 1975, thirteen underground concrete sumps (depths and construction described in Appendix G) were installed to collect oil from the trenches, and five underground steel tanks (depths and construction described in Attachment 1) were installed to store molder oil when molder repair was necessary. Sumps were pumped out with portable pumps, which transported oil to the above-ground Dirty Oil Transfer Station, and pumped via overhead piping to the oil reclamation system at the IWT plant.

In approximately 1995, the hydraulic oil tanks were removed and the sumps were abandoned in place by filling them with sand, gravel and/or concrete. The piping associated with the tanks and sumps was plugged. These closure activities were conducted in accordance with a SPDES consent order. The approximate locations of the sumps and tanks are shown on Figure 1-3.

Painting operations (1963-1993). The facility's painting operations were performed from approximately 1963 until July or August of 1993. The paint room was constructed in 1973 to provide for an automated parts painting operation and included ten paint booths. A waterwash spray curtain, which was eventually replaced by an emulsion based system, was used for overspray control during the paint application process. The paint room, which was located in the approximate center of the manufacturing building, was operated in conjunction with the paint storage and paint mix rooms, which were located near the northwestern portion of the facility, as indicated on Figure 1-3. Paints and thinners were stored and mixed in these rooms and then pumped to the paint room through a series of overhead pipes running through the facility.

1.2.3. Facility description

Main manufacturing building. The main manufacturing building is an approximate 770,000 ft^2 metal and brick building which was originally constructed in 1952. Two major building additions were constructed over time. The building was expanded in 1965 to include additional bays located to the south of the original portion of the building. Following the 1965 building expansion, the facility included bays A-K/0-25, as indicated on Figures 1-3 and 1-4. Another expansion was constructed in 1974-1975, which consisted of a new metal sided warehouse section, including bays AA-FF/14-25, constructed to the north of the original manufacturing building. In addition to manufacturing and production, the building contained warehouse, receiving, maintenance and storage areas.

Administration building. The administration building is an approximate 40,000 ft^2 two story concrete block and metal building which is attached to the north side of the main manufacturing building, as indicated on Figure 1-2. The building housed the facility cafeteria, nurse's office and the various facility administration offices. The administration building was constructed in 1952 along with the manufacturing building.

Powerhouse. The facility powerhouse is an approximate 17,600 ft^2 concrete and metal building located southeast of the manufacturing building, as indicated on Figure 1-2. The building contains a basement and supplied steam and compressed air to the manufacturing building. Three natural gas fired boilers are located in the building. These boilers were formerly coal fired. To the east of the powerhouse are the former coal storage silos and the former coal yard; to the south is the coal delivery rail line and ash hopper; and to the west is the natural gas house. Located to the northeast of the powerhouse is the bulk handling building, which is a metal sided shed constructed over the rail line formerly used to deliver polypropylene pellets to the facility.

IWT plant. The IWT plant is an approximate 12,600 ft^2 building which contains a main level and a basement. The IWT plant and related tankage and process equipment are located south of the manufacturing building, as indicated on Figure 1-2, and are connected to the building via an overhead pipe trestle. The IWT plant was originally constructed in approximately 1965 in order to treat plating-related wastewater from the facility processes. The unit operations at that time were focused towards the plating operations and included cyanide and metals treatment. As GM's manufacturing operations changed over the facility's operational history, the IWT plant was required to treat wastewater generated more from painting and injection molding operations rather than plating-related wastes. During the mid-1980s, the IWT plant was modernized to meet discharge standards established by the local Onondaga County Department of Drainage and Sanitation (OCDDS) Publicly Owned Treatment Works (POTW). In 1986, a garage addition to the IWT plant was constructed for use as a temporary hazardous waste storage area (also known as the Hazardous Waste Accumulation Area). This area contains supplemental wastewater treatment equipment, roll off boxes for hazardous waste debris, spill response equipment and storage space. In October 1997, the IWT plant discharge was redirected to the sewers leading to Outfall 003, in accordance with a September 25, 1997 State Pollutant Discharge Elimination System (SPDES) permit. Current and former IWT plant features are shown on Figure 1-5.

Currently, the IWT plant treats the following water streams, as depicted in Figure 1-6: ground water collected in the thinner area ground water recovery system; water collected in the oil/water collection sumps, the IWT plant basement sump, and the main IWT sump (also known as the acid-alkali bunker), and water generated at the facility during IRMs. Each of these streams is directed to an equalization tank, and subsequently treated by oil separation, solids settling and filtration, and carbon adsorption.

Mold storage (former tank farm) building. The mold storage (former tank farm) building is an approximate 7,200 ft^2 metal sided building located near the southwest corner of the manufacturing building, as indicated on Figure 1-2. This building was also constructed during the 1965 expansion and was formerly used for the storage of chemicals used in the plating and related processes. Tanks containing plating chemicals and solvents were located inside the building and piped into the manufacturing building via an overhead pipe trestle. Specifically, the former tank farm included three 9,000 gallon cyanide solution tanks, one 7,000 gallon trichloroethene (TCE) tank, two 13,000 gallon acid-alkali tanks, one 12,500 gallon chrome solution tank, and one 12,000 gallon sulfuric acid tank. During the early 1980s, the tanks were removed from the building, and it was then used for storage of molds and miscellaneous equipment. An approximate 6000 ft^2 concrete open area located directly west of the mold storage building was formerly used for the temporary storage of hazardous waste. Use of this area was discontinued during the late 1980s.

Main transformer substation. The main transformer substation or primary switch house is an approximate 1,800 ft^2 building located west of the manufacturing building, as indicated on Figure 1-2. This building contains electrical equipment used to support the four facility transformers which are located adjacent to the building to the north.

Process/storm/sanitary sewer systems. The process sewer system is located beneath the floor of the manufacturing building as indicated on Figure 1-7. The sewers are constructed of vitrified clay and range in diameter from 4 to 18 inches. The process sewer system formerly served the paint room and, prior to that, the plating operations. Operations which would contribute flow to the process sewer system are inactive; however, there remains a limited amount of flow present in the system, likely from ground water, and condensate and incidental infiltrations through cooling towers on the roof. The process sewer system drains to the main IWT sump (acid-alkali bunker); the main IWT sump discharge is conveyed via overhead piping to the IWT plant.

The sanitary sewer system at the facility is located beneath the main manufacturing building and near the IWT plant, as depicted on Figure 1-8. The sanitary sewers are believed to be constructed of cast iron. Sewer #1, which is accessed via the manhole located in front of the administration building, is associated with the domestic sewage discharge from the manufacturing building. Sewer #2, which is accessed via a manhole located adjacent to the east side of the IWT plant, was the former IWT plant effluent discharge, prior to the October 1997 redirection of IWT plant discharge to Outfall 003. The line associated with Sewer #2 runs along the east side of the plant and combines with the flow from Sewer #1. The sewer lines then discharge to the Onondaga County Department of Drainage and Sanitation (OCDDS) POTW.

As part of the redevelopment activities for the Carpenter Leasehold Space, a new sanitary connection was installed from the manufacturing building to the sanitary sewer on the southeast side of the building.

The storm sewer system at the facility is comprised of piping associated with surface water discharge outfalls designated 003 and 004, as depicted on Figure 1-8. The storm sewer system in the immediate vicinity of the manufacturing building and in the majority of the northern property area drains to Outfall 003 and will be referred to as the main storm sewer system. The main storm sewer system drains precipitation runoff from the facility ground and roof, and receives IWT plant treated effluent. The southeastern corner of the property and portions of the parking lot areas east of the facility drain to Outfall 004; this system will be referred to as the eastern storm sewer system. Both Outfalls 003 and 004 discharge to Ley Creek under the terms of the September 25, 1997 SPDES permit.

A portion of the historic storm water collection system is located beneath the manufacturing building. This part of the system was formerly connected to downspouts from the building roof and conveyed storm water from the roof through the facility property and eventually to Ley Creek. In the mid-1980s, the underground system beneath the facility floor was abandoned, and a new overhead system was constructed. The new overhead system ties into the existing main storm sewer system outdoors. Portions of the main storm sewer outdoor piping were rehabilitated (either by sliplining or cured in place liner) or replaced altogether during this period of time as well. The storm sewers beneath the building were plugged, and oil/water collection sumps were installed to intercept water and oil within the lines. The configuration of the facility's historic (now inactive) storm sewer system is depicted on Figure 1-9. Storm sewer modifications are discussed in detail in Attachment 3 of Appendix G.

In March 2000, a work plan was submitted to NYSDEC to conduct a storm sewer televising IRM. The IRM is being conducted in order to evaluate the integrity of storm sewer lines leading to Outfall 003, the oil/water collection sumps, and the abandoned storm sewers associated with these sumps. To facilitate the televising, the sewers will be cleaned, which will result in the removal of sediment and oil present in these sewers and oil/water collection sumps. The results of the IRM will be used to evaluate compliance with the final SPDES permit conditions that become effective in September 2000. NSYDEC's Comments on the work plan were received on March 16, 2000 (Benjamin 2000b). A comment response letter was submitted to NYSDEC on April 6, 2000 (Hartnett 2000a), and the work plan will be finalized in April 2000.

Closed surface impoundments. During its operational history, the facility operated two surface impoundments on the facility property. Impoundment locations are indicated on Figure 1-2. Impoundment #1 was constructed in 1963 and received treated effluent from the IWT plant and storm water runoff from paved areas. Prior to the early 1980's, an overflow pipe from the IWT sump connected to the storm sewer leading to the Impoundment #1. In the early 1980's, the overflow pipe was plugged and a containment area was constructed to contain IWT sump overflow, which was pumped out by tanker following overflow events. Impoundment #2 was constructed in 1979 and was designed to collect storm water runoff and oil which may have been present in the runoff. The two surface impoundments were closed in 1989. Prior to closure, sediments in the former impoundments were sampled in 1986 and in 1988. The 1986 sample results indicated that PCBs were present in sediments at 200 to 300 mg/kg (impoundment #1) and up to 17 mg/kg (impoundment #2). Several metals including chromium, iron, mercury, and zinc were also detected in these sediments. In 1988 sample results indicated that PCBs were present in sediments at concentrations ranging from 35 to 6,400 mg/kg (Weston 1988a and 1989). The closure process consisted of the removal and disposal of impacted sediment from the two impoundments. Impoundment #2 was backfilled with clean soil, regraded, and covered with a soil layer and vegetative seeding. Impoundment #1 was backfilled with clean soil and with PCB-containing soil from the Meadowbrook/Hookway site in Syracuse, New York, regraded, and covered with 1 ft of clay, 1.5 to 2 ft soil, and vegetative seeding. A post-closure quarterly ground water monitoring program was conducted until September 25, 1997, when the Order became effective. The Order supersedes the post-closure monitoring program and requires semi-annual ground water monitoring of the ten impoundment monitoring wells.

1.2.4. Facility regulatory programs

Operations at the Former IFG Facility have been regulated and monitored under a number of regulatory programs. A chronological review of these programs follows:

SPDES/Clean Water Act (CWA). The facility has been the subject of National Pollutant Discharge Elimination System (NPDES) or SPDES permits and consent orders since 1972, when the first NPDES permit was issued. In 1972, two outfalls were permitted: Outfall 001, which discharged drainage from the eastern portion of the facility, and Outfall 002, which discharged IWT plant treated effluent and drainage from the western portion of the facility. Outfalls 001 and 002 combined for discharge to Ley Creek. Future SPDES permit renewals established Outfall 003 to monitor the combined discharge from Outfalls 001 and 002, and Outfall 004 to monitor storm drainage from the facility parking lots, as well as areas upgradient of the facility. In 1986, IWT plant effluent was removed from the SPDES discharge and directed to the OCDDS POTW. IWT plant effluent was returned to Outfall 003 under the current SPDES permit, effective September 25, 1997, to which the Order is appended. The current SPDES permit contains discharge limitations and monitoring requirements for Outfalls 003 and 004, as well as the IWT plant discharge (Outfall 03B), and the point at which the eastern storm sewer system enters the facility property (Outfall 04I).

In 1981, GM entered into a Consent Order with NYSDEC (No. 7-0383) for investigation of the source of PCB-contaminated oil being discharged to a holding pond prior to discharge to Ley Creek. This investigation detected leakage from the underground hydraulic oil sumps beneath the manufacturing building. It was also identified that PCB-contaminated oil was infiltrating into the storm sewer system beneath the manufacturing building and subsequently discharging with the storm sewer discharge. In accordance with a revised 1983 Consent Order with NYSDEC (No. 7-0383), the underground hydraulic oil sumps were abandoned, and the underground hydraulic oil tanks were removed, as discussed in Section 1.2.2. Additionally, as discussed in Section 1.2.3., the portion of the storm sewer system beneath the manufacturing building was abandoned, and eight oil/water collection sumps, depicted on Figure 1-9, were installed in the vicinity of the plugged storm sewer lines to collect oil and water accumulating in the abandoned lines. Oil/water collection sumps are pumped to the IWT plant for treatment, as further discussed in Section 4.1.1.

In accordance with a 1982 SPDES permit renewal, GM conducted a hydrogeological investigation in the vicinity of the former coal pile area. Additionally, ground water in the vicinity of the coal pile and powerhouse was monitored monthly and reported quarterly under the SPDES permit until September 25, 1997, when the current SPDES permit became effective.

GM entered into a 1985 Consent Order (case #7-0585) with NYSDEC to address continuing issues related to:

- Suspected continued infiltration of PCB-containing hydraulic oil into the sewer systems subsequent to installation and operation of the oil/water collection sumps
- Wastewater treatment effectiveness
- Overall impact, if any, of facility operations on subsurface soil and ground water on the property.

In compliance with this Consent Order, GM conducted a series of engineering studies and modifications in subsequent years. The following efforts were performed to reduce discharges to Ley Creek:

- Additional replacement of storm sewer piping underneath the manufacturing building with overhead piping and plugging of inactive storm sewers
- Sliplining or Insituform® lining of portions of the storm sewer system (as indicated in Figure 1-8)
- Conduct of a two-phased hydrogeological investigation at the facility
- Conduct of a storm water outfall assessment
- Modification of the IWT plant and redirection of treated process wastewater discharge to the OCDDS POTW
- Closure of Impoundments #1 and #2
- Connection of the storm sewer lines which formerly discharged to the surface impoundments into one line discharging through Outfall 003 to Ley Creek
- Application for a SPDES permit amendment for storm water discharge through Outfalls 003 and 004.

In 1986, GM entered into a SPDES Consent Order with NYSDEC to investigate and remediate a release of thinner from three underground storage tanks (USTs) and associated piping located on the west side of the facility. The tanks formerly stored thinners (xylene, toluene and ethylbenzene) associated with the facility's painting operations. The tanks were removed in 1985, and impacted soil and ground water was identified. An investigation was performed and a remedial action plan was developed to remediate the thinner plume (EDI Engineering & Science [EDI] 1986b). As discussed in Section 4.1, the remedial program consists of the operation of two ground water recovery trenches and sampling and analysis of ground water monitoring wells. The locations of the former thinner tanks and recovery trenches are indicated on Figure 1-2. This system was installed in late 1986 and has been operational since. Monitoring of ten wells was performed biweekly until September 25, 1997, when the Order became effective. The Order supersedes the 1986 SPDES Consent Order and requires quarterly monitoring of fifteen wells and annual monitoring of four wells. In February 2000, NYSDEC and GM agreed, based on analytical results, to modify the monitoring frequency to annually for eight wells (Hartnett 2000b and Benjamin 2000).

Resource Conservation and Recovery Act (RCRA). The closure and associated post-closure quarterly ground water monitoring programs at the two closed surface impoundments were performed pursuant to RCRA post-closure standards as established by NYSDEC (6 NYCRR Part 373). As discussed in Section 4, the two surface impoundments were closed in accordance with a closure plan (Weston 1988a), as documented in the closure documentation report (Weston 1989). The post-closure monitoring program background, history and procedures were documented in a report dated April 1988 and revised November 1992, as prepared by O'Brien & Gere (O'Brien & Gere 1988, 1992c). Quarterly ground water sampling and analysis with quarterly and annual reporting of the results to NYSDEC began in 1989 and was performed until September 25, 1997, when the Order became effective. The Order supersedes the RCRA post-closure monitoring program and requires semi-annual ground water monitoring of the ten impoundment monitoring wells.

Historically, GM operated a drum storage area located west of the former mold storage building. The drum storage area was operated on a temporary (less than 90 day) basis. This area was taken out of service when the IWT plant garage was constructed. A closure plan for the former drum storage area was submitted to NYSDEC RCRA personnel for their review in 1988 (Weston 1988b). GM received comments from NYSDEC on the proposed closure plan. A revised closure plan was not submitted to NYSDEC due to NYSDEC's intention to include the drum storage area closure in a multi-media regulatory program.

In 1988, a RCRA Visual Site Inspection (VSI) was conducted at the facility by A.T. Kearney, Inc. and DPRA Incorporated, working under contract to USEPA. The VSI was a facility walk through to evaluate potential Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) as defined by RCRA. The results of the VSI were documented in a report dated February 1989 (AT Kearney and DPRA 1989).

In 1989, in response to the findings of the RCRA VSI, GM reviewed the potential SWMUs and AOCs and compiled a listing of issues associated with the status of each SWMU and AOC. This review is documented in a report dated October 1990 as prepared by O'Brien & Gere (O'Brien & Gere 1990b).

In 1991, GM was presented with a draft Part 373 hazardous waste management permit by NYSDEC. This draft permit identified several SWMUs and AOCs throughout the facility and proposed requirements for operation and closure of each. GM submitted comments on the draft permit to NYSDEC on December 21, 1991 (Kochem 1991). The permit was not finalized. Appendix A presents a list of these SWMUs and AOCs and their current status.

Fulfillment of and compliance with the Order satisfies any RCRA post-closure permit requirements or any interim status RCRA requirements to investigate the scope of contamination from a SWMU or AOC.

New York State Inactive Hazardous Waste Disposal Site Program - Ley Creek PCB Dredgings Site. In 1985, GM entered into a Consent Order with NYSDEC to conduct an investigation of PCB contamination in soil and ground water in the Ley Creek area, which is currently referred to as the Ley Creek PCB Dredgings site. Pursuant to this Consent Order, a hydrogeologic investigation was conducted (O'Brien & Gere 1987a), which is discussed further in Sections 1.2.5, 2 and 3.

In 1987, GM entered into a Consent Order (#A7-0129-87-09) with NYSDEC to investigate the areal and vertical extent of PCBs at the Ley Creek PCB Dredgings site and identify any current and/or potential on-site and off-site releases or migration of PCBs. Pursuant to this Consent Order a field investigation was conducted (O'Brien & Gere 1989b), which is discussed further in Sections 1.2.5, 2 and 3.

In 1991, GM entered into a Consent Order (#A7-0239-90-07) with NYSDEC to develop and implement an RI/FS at the Ley Creek PCB Dredgings site (Site No. 7-34-044). The RI/FS began in 1991 and was completed in 1996 (O'Brien & Gere 1993 and 1996b). A Record of Decision (ROD) was issued by NYSDEC for the Ley Creek PCB Dredgings site in March 1997. The remediation construction phase began in December, 1999. NYSDEC deferred to this Order the evaluation of ground water, surface water, and sediment associated with the Ley Creek PCB Dredgings site (Ley Creek Deferred Media).

New York State Inactive Hazardous Waste Disposal Site Program - Ley Creek Relief Interceptor Sewer Interim Remedial Measure. Also in 1991, GM entered into a Consent Order (#A7-0263-91-05) with NYSDEC to develop and implement an IRM program in an area adjacent to GM's northern property boundary where the County of Onondaga proposed to install a new Ley Creek Relief Interceptor Sewer. As part of the IRM, GM excavated PCB-containing soil, installed and operated a ground water treatment system and temporarily stored excavated soil pending characterization and disposal. The IRM began in 1991 and was completed in early 1994.

New York State Inactive Hazardous Waste Disposal Site Program - Former IFG Facility and Ley Creek Deferred Media. GM and NYSDEC entered into a Consent Order (Order), effective September 25, 1997, to develop and implement an RI/FS and meet SPDES discharge limits at the Former IFG Facility. This Supplemental RI Report has been developed in accordance with the requirements of this Order.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Program. By an undated Joint Demand for Information, NYSDEC and USEPA requested in July of 1994 that GM, under CERCLA § 104 (e) and related statutory authorities under the New York State Environmental Conservation Law, provide historical information related to environmental conditions at the Former IFG Facility. GM submitted its response to the joint demand on September 29, 1994. NYSDEC and USEPA made a supplemental demand for information, under letter dated December 8, 1994, and GM submitted its supplemental response on February 2, 1995.

NYSDEC and USEPA thereafter notified GM by letter, dated June 23, 1997, of their designation of the Former IFG Facility and the Ley Creek PCB Dredgings site as sub-sites to the Onondaga Lake National Priorities List (NPL) site.

Clean Air Act. The facility has historically retained certificates to operate process, ventilation or exhaust systems (air permits for applicable processes), as issued by the NYSDEC Division of Air. Since the facility ceased manufacturing operations in 1993, permits have been discontinued.

OCDDS Industrial Wastewater Program. In the mid-1980s, GM elected to discontinue its process water discharge to Ley Creek and discharge this water instead to the OCDDS POTW under the terms of an industrial wastewater discharge permit. Accordingly, OCDDS issued GM Industrial Wastewater Discharge Permit No. 97, and GM began discharging in late 1986. The terms of the permit required a self-monitoring program, which consisted of monthly sampling and analysis of several components of the discharge and quarterly reporting to OCDDS. IWT plant effluent was redirected from discharge to the POTW to discharge to Ley Creek via Outfall 003 under the current SPDES permit, effective September 25, 1997.

1.2.5. Environmental investigations

Twenty five environmental investigations, the majority conducted in accordance with the regulatory programs previously identified, have been conducted at the Former IFG Facility and for the Ley Creek Deferred Media. These investigations, which were conducted from approximately 1983 to 1999, included the sampling and analysis of soil, ground water, surface water, storm water, sludge, sediment and fish. The site investigation programs are itemized as follows and are further discussed in Sections 2 and 3 of this report.

1983 to 1997 - Thomsen Associates and Empire Soils Investigations, Inc. (Empire Soils) Hydrogeological Investigation and monthly ground water monitoring. Thomsen Associates and Empire Soils installed five wells as part of a hydrogeologic investigation in the vicinity of the former coal pile in 1983 (Thomsen Associate and Empire Soils 1983). Pursuant to a 1982 SPDES permit renewal, ground water was routinely monitored for total iron and pH in the vicinity of the coal pile. Five wells were sampled monthly until the late 1980s/early 1990s, when four wells were damaged. Since that time, with NYSDEC's concurrence, one well was sampled monthly with quarterly reporting until September 25, 1997, the effective date of the current SPDES permit. The current SPDES permit does not require ground water monitoring in the vicinity of the coal pile because the coal pile was removed in 1996.

1985 EDI Hydrogeological Investigation. A hydrogeological investigation was conducted by EDI pursuant to a 1985 SPDES Consent Order to evaluate potential facility impacts on ground water, storm water and soil. Field efforts included soil boring and monitoring well installation, trench installation, water level measurements, vertical permeability measurements, hydraulic conductivity measurements, and sampling of soil, ground water, storm water, and Ley Creek surface water (EDI 1985a).

1985 EDI Phase II Hydrogeological Investigation. Subsequent to the hydrogeological investigation, EDI conducted a Phase II hydrogeological investigation to further investigate three areas of contamination identified in the hydrogeological investigation: an area near the Administration Building, the Outfall 003 storm sewer pipeline route, and the IWT plant area. Field efforts included soil boring and monitoring well installation, water level measurements, and sampling of soil and ground water (EDI 1986a).

1985 EDI Ley Creek sampling program. EDI conducted a program in 1985 to evaluate the occurrence and concentration of PCBs in Ley Creek sediment and water. Field efforts included sampling and analysis of surface water, sediment and fish (EDI 1985b).

1985-1986 to 1997 - EDI Solvent Spill Hydrogeological Investigation/Remedial Action Plan and subsequent ground water monitoring. As discussed in Section 1.2.4, pursuant to a 1986 SPDES Consent Order, EDI conducted a hydrogeological investigation to evaluate contamination associated with a thinner release from three former USTs and associated piping used for painting operations. The locations of the former thinner USTs are indicated on Figure 1-2. Field efforts included soil boring and monitoring well installation, water level measurements, and sampling of soil and ground water (EDI 1986b). Additionally, ten ground water monitoring wells in this area were sampled bi-weekly pursuant to the SPDES Consent Order to provide monitoring data relative to the operating ground water recovery system. Bi-weekly monitoring ceased September 25, 1997, the effective date of the Order. The Order superseded the 1986 SPDES Consent Order and required quarterly monitoring of fifteen wells and annual monitoring of four wells. In February 2000, NYSDEC and GM agreed, based on analytical results, to modify the monitoring frequency to annually for eight wells (Hartnett 2000b and Benjamin 2000).

1986-1987 O'Brien & Gere Hydrogeologic Investigation of Fill Area Along Ley Creek. O'Brien & Gere conducted a hydrogeologic investigation to evaluate the presence of PCBs in fill materials, native soil, and ground water, and to evaluate the migration of PCBs to Ley Creek via ground water discharge. Field efforts included soil boring and monitoring well installation, water level measurements, *in situ* hydraulic conductivity measurements, and sampling and analysis of soil and ground water (O'Brien & Gere 1987a).

1987 O'Brien & Gere Storm Outfall Assessment. Pursuant to a 1985 SPDES Consent Order, O'Brien & Gere conducted a storm outfall assessment to evaluate contamination associated with storm water discharges. Storm water samples were collected from various storm sewer manholes at the facility during four storm events (O'Brien & Gere 1987b).

1989 O'Brien & Gere Storm Sewer Sampling Study. O'Brien & Gere conducted a storm sewer sampling effort in 1989 to evaluate sources of PCBs and TCE to the Outfall 003 storm water discharge. Storm water samples were collected from various storm sewer manholes at the facility during six sampling events (O'Brien & Gere 1989c).

1988-1989 to 1997 - O'Brien & Gere Surface Impoundment Post-Closure Ground Water Monitoring Program. In accordance with a post-closure monitoring program (O'Brien & Gere 1988, 1992c), ten monitoring wells (five shallow/deep well nests) in the vicinity of the closed surface impoundments were monitored monthly with quarterly and annual reporting from 1989 until September 25, 1997, the effective date of the Order. The Order supersedes the post-closure monitoring program and requires semi-annual monitoring of the ten wells.

1988-1989 O'Brien & Gere Ley Creek Dredged Material Area Field Investigation. O'Brien & Gere conducted a field investigation to evaluate the horizontal and vertical extent of PCBs in dredged fill material and ground water. Field efforts included geophysical surveys, soil boring and monitoring well installation, water level measurements, *in situ* hydraulic conductivity measurements, and sampling and analysis of soil, ground water, sediment, surface water, and air (O'Brien & Gere 1989b).

1990-1991 O'Brien & Gere Ley Creek Relief Interceptor Sewer Area IRM Sampling Program. O'Brien & Gere installed a series of soil borings along the Ley Creek Relief Interceptor Sewer pipeline route in 1990 to identify the limits of soil excavation and disposal efforts to be conducted as an IRM by GM at the facility. Eighteen borings were installed to depths of 10 to 12 ft, and soil samples were collected for PCB analysis (O'Brien & Gere 1990, 1991). Additionally, post-excavation confirmation soil samples were collected from the IRM excavation (O'Brien & Gere 1992b).

1991 Onondaga County Ley Creek Relief Interceptor Sewer Area Sampling Program. As part of the installation of the Ley Creek Relief Interceptor Sewer in 1991, Onondaga County's contractors collected subsurface soil samples along the pipeline route for analysis for PCBs (Onondaga County 1991). Following completion of construction of the sewer, Onondaga County's contractors collected surface soil samples along the pipeline route for analysis for PCBs (Cocciardi 1991).

1992 O'Brien & Gere Ley Creek Dredged Material Area RI. An RI was conducted by O'Brien & Gere pursuant to a 1991 Consent Order with NYSDEC to evaluate dredged material along the southern bank of Ley Creek north of Factory Avenue, as well as ground water, Outfall 003 discharge water, Ley Creek sediment, and Ley Creek fish. Field efforts included soil boring and monitoring well installation, water level measurements, *in situ* hydraulic conductivity testing, and sampling of surface and subsurface soil, ground water, Outfall 003 storm discharge, and Ley Creek sediment and fish (O'Brien & Gere 1993).

1993 O'Brien & Gere storage cell confirmation sampling program. O'Brien & Gere collected ten surface soil samples from an area on the northwestern portion of the facility in 1993. Samples were collected in the former location of a storage cell used for PCB-contaminated soil excavated during the Ley Creek Relief Interceptor Sewer Area IRM (O'Brien & Gere 1994).

1994 Entrix, Inc. (Entrix) Phase I Environmental Site Assessment (ESA). At the request of counsel, a Phase I ESA was conducted for the facility between May 1993 and October 1993 by Entrix. Although this is a privileged and confidential, prepared at the request of counsel document, the data contained in the report were used throughout the preparation of this Supplemental RI Report. The purpose of the Phase I ESA was to qualitatively evaluate general facility environmental conditions and identify potential areas of concern (PAOCs) where information indicated the potential for a past release of chemicals into the environment at levels which could adversely impact public health and the environment. The Phase I ESA identified PAOCs at the facility, and additional PAOCs were identified by GM subsequent to the Phase I ESA.

1995-1996 Conestoga-Rovers & Associates (CRA) Phase II ESA. At the request of counsel, subsequent to the Phase I ESA, a Phase II ESA was initiated at the facility in August 1995 by CRA. The Phase II ESA was performed to confirm or deny contaminant releases into the environment which may have occurred at each identified PAOC. Additional Phase II ESA activities were conducted at the facility in April 1996 in order to address data gaps and to better characterize the extent of contamination at certain PAOCs where the August 1995 Phase II ESA activities had indicated the presence of a contaminant release. Although these are privileged and confidential, prepared at the request of counsel documents, the data contained in the reports were provided to NYSDEC (Hartnett 1996) and were used throughout the preparation of this Supplemental RI Report.

The following PAOCs, as indicated on Figure 1-10, were investigated during the Phase II ESA:

- #1 *Abandoned underground oil sumps and tanks.* The Phase I ESA identified eight hydraulic oil sumps and five hydraulic oil USTs as a PAOC. Upon further review, thirteen hydraulic oil sumps were identified by GM. As indicated on Figure 1-3, sumps are labeled as A through M and tanks are labeled as N through R. The sumps and tanks are located throughout the manufacturing building and were used to collect hydraulic oil from trenches around injection molders. The tanks were removed, and the sumps were taken out of service by filling them with sand, gravel, and/or concrete in the mid 1980's.

- *#2 Former PCB oil USTs.* The Phase I ESA identified two potential former PCB oil USTs located on the eastern side of the manufacturing building as a PAOC. No documents or information regarding the history of the tanks are available. These tanks were not located during the Phase II ESA and are suspected to have been removed.

- *#3 Former thinner tanks.* The Phase I ESA identified the need to further evaluate the extent of the solvent release associated with the former operation of three thinner USTs associated with facility painting operations. As discussed in Section 1.2.4, an investigation was performed by EDI, and a remedial action plan was developed and implemented (EDI 1986b). The EDI investigation did not indicate whether the contaminated plume extends beneath the manufacturing building, which was the focus of the Phase II ESA sampling. The PAOC is located at the northwest corner of the manufacturing building, as indicated in Figure 1-10.

- *#4 Electroplating wastewater treatment tanks.* The Phase I ESA identified two aboveground concrete tanks located to the south and east of the IWT plant building as a PAOC. The tanks were formerly used for the treatment of chromium and cyanide residues from electroplating operations.

- *#5 Former liquid waste incinerator area.* The Phase I ESA identified a former liquid waste incinerator area and two 1,500 gallon feed tanks that were operated in the IWT plant between 1968 and 1972 as a PAOC. The incinerator was used to burn waste or unrecyclable solvents, paints, and oils. This PAOC is located in the vicinity of the existing Hazardous Waste Accumulation Area at the IWT plant, as indicated on Figure 1-10.

- *#6 Hydrochloric acid spill area.* The Phase I ESA identified an area in the basement of the IWT plant where a hydrochloric acid spill occurred in 1985 as a PAOC.

- *#7 On-site landfill.* The Phase I ESA identified an on-site landfill, occupying approximately 3 acres, located northwest of the manufacturing building as a PAOC. The landfill was used from 1952 to 1961 or 1962 for the disposal of boiler fly ash and bottom ash, paint and buffing sludges, plating wastes (estimated 10 cu yd per year), general trash, and construction debris. Six to eight feet of soil/clay was placed on the landfill in 1962 or 1964. Disposal of boiler fly ash and construction debris continued until about 1970. It is unclear whether the material placed in the landfill after 1964 was placed on top of the soil/clay, or in a different area of the landfill.

- *#8 Acid-alkali bunker.* Subsequent to the Phase I ESA, GM identified the acid-alkali bunker, also known as the main IWT sump, as a PAOC. The acid/alkali bunker received discharge from the process sewer system. From the acid/alkali bunker, wastewater was pumped to the IWT plant. The acid/alkali bunker is adjacent to the north side of the manufacturing building, as indicated on Figure 1-10.

- *#9 Sulfur dioxide (SO_2) scrubber area.* Subsequent to the Phase I ESA, the SO_2 scrubber area was identified as a PAOC by GM. The scrubbers were formerly operated as part of the IWT plant to remove SO_2 from the boiler flue gas stream.

- *#10 General storage area.* The general storage area consists of a concrete pad located east of the IWT plant, which was identified by GM as a PAOC subsequent to the Phase I ESA. This area was used for storage of various facility equipment (*e.g.*, conveyors, fork trucks) prior to disposal of the equipment.

- *#11 Dock leveler sumps in the east and west receiving docks.* Loading dock leveler sumps were identified as a PAOC by GM subsequent to the Phase I ESA. The sumps were formerly a part of the manufacturing building's east and west receiving docks, and potentially formerly contained PCB hydraulic oil.

- *#12 Compactor area.* The compactor area was identified by GM as a PAOC subsequent to the Phase I ESA. The compactor was formerly located between the original manufacturing building and the building addition, which is in the northwestern corner of the manufacturing building.

- *#13 Sumps in former plating area.* Seven sumps formerly used in electroplating operations located throughout the manufacturing building were identified as a PAOC by GM subsequent to the Phase I ESA. The sumps were used for the collection of electroplating fluids which contained chromium, copper, nickel and cyanide.

- *#14 Former paint shop.* During the August 1995 sampling in the vicinity of the former plating area sumps, GM identified the former paint shop as a PAOC due to the volatile organic constituent (VOC) detections in borings BH-7 and BH-9 in that area. The former paint shop occupies an area of approximately 28,000 ft^2 and is located near the center of the manufacturing building, as indicated on Figure 1-10. The former paint shop was originally constructed in 1963 to provide for an automated parts painting system for the parts created in the manufacturing process. Various solvents were used and stored within the paint shop.

- *#15 Storm water sewer trench.* A portion of the inactive storm sewer trench shown in Figure 1-9 under the manufacturing building was investigated in April 1996 to evaluate whether hydraulic oil releases from underground sumps and/or tanks migrated along the storm sewer trench. This portion of the storm sewer trench was selected for the investigation because it was the portion of the storm sewer trench leading to oil/water collection sump #5 (where oil has been observed) and based on its proximity to total petroleum hydrocarbons detected in soil samples collected in fill surrounding abandoned hydraulic oil sumps during the 1995 sampling activities. The storm water sewer trench contains vitrified clay pipe that was formerly used to convey storm water originating from the manufacturing building's roof drains. The use of the storm water sewer trench was discontinued in the mid 1980's, when a replacement system consisting of overhead lines was built and the original system was plugged. Several oil/water collection sumps were installed within the storm water sewer trench to remove oil or water that may have accumulated within the former storm water drainage system. The contents of these sumps are pumped to the IWT plant for treatment and disposal.

1996 NMPC Factory Avenue soil sampling. NMPC installed thirty soil borings along the north and south sides of Factory Avenue to evaluate soil conditions at proposed power pole locations. Nine poles were installed on the south side of Factory Avenue in the vicinity of the facility, and soil samples were collected and analyzed for PCBs (NMPC 1996).

1996 O'Brien & Gere utility pole location sampling program. O'Brien & Gere installed three soil borings along the facility southern property boundary to evaluate soil conditions at proposed telephone pole locations. Soil samples were collected and analyzed for PCBs (O'Brien & Gere 1996a).

1995-1996 O'Brien & Gere Outfall 004 sewer line sampling program. O'Brien & Gere collected samples from the Outfall 004 sewer line in 1996 to evaluate the source of PCBs to the Outfall 004 discharge.

1998/1999 O'Brien & Gere Supplemental RI sampling program. O'Brien & Gere installed and sampled 18 new monitoring wells, completed and sampled 46 soil borings, and collected 31 surface soil samples. The locations of the new monitoring wells and soil borings are illustrated on Figures 2-2 and 2-3, respectively. In addition, 40 existing ground water monitoring wells were sampled. Samples were analyzed for VOCs, semivolatile organic compounds (SVOCs), PCBs, and site-related metals (arsenic, chromium, copper, lead, nickel, and zinc). In addition, some samples were also analyzed for target compound list/target analyte list (TCL/TAL) metals, and TCL pesticides, and five surface soil samples were analyzed for dioxins and furans. The Supplemental RI work was conducted to address data needs identified by NYSDEC for the site based on NYSDEC's review of the preliminary RI/FS report. NYSDEC's specific needs were as follows:

- horizontal and vertical extent of ground water contamination at the site
- characteristics of ground water flow within the glacial till (unless it can be demonstrated, with the available data, that ground water contamination does not exist within that unit)
- current ground water data for evaluation of construction worker direct contact exposure pathways
- adequate analytical results (VOCs, SVOCs, PCBs/pesticides, inorganics) for site wide ground water
- background off-site ground water conditions
- migration pathways presented by subsurface utilities
- presence of PCB non-aqueous phase liquid (NAPL) and solvent dense non-aqueous phase liquid (DNAPL)
- background surface and subsurface soil data
- investigation of solid waste management units (SWMUs) identified in NYSDEC's 1991 draft Part 373 hazardous waste management permit
- subsurface soil VOC data for risk assessment
- surface soil data for risk assessment
- comprehensive sampling for metals in ground water across site

- evaluation of potential presence of PCBs in ground water in several major portions of site.

1.2.6 Additional NYSDEC data collection activities

Additional data collection efforts were conducted by or on behalf of NYSDEC in various locations in Ley Creek. These data collection efforts, conducted between 1987 and 1996, included sampling and analysis of sediment and surface water. Data collected prior to 1996 is presented in the 1997 Preliminary RI/FS Report. Data collection efforts conducted in 1996 are summarized as follows and are further discussed in Sections 2 and 3 of this report.

1987 Former Ley Creek Bed Sampling - NYSDEC collected four sediment samples in the former Ley Creek bed west of Rt. 11 on May 28, 1997 for PCB analysis. The flow path of Ley Creek was redirected north of the original creek bed during dredging activities in the early 1970's (Momberger 1987).

1989/1990 Rotating Intensive Basin Studies (RIBS) Sampling - NYSDEC collected sediment and surface water samples from Ley Creek at the Park Street bridge as part of the RIBS water quality assessment program in 1989 and 1990. Samples were analyzed for a range of parameters, as discussed in Sections 2 and 3 (NYSDEC 1992).

1993 Salina Town Landfill Preliminary Site Assessment (PSA) Sampling - Ecology and Environment Engineering, P.C. collected surface water and sediment samples from Ley Creek in the vicinity of the Salina Town Landfill in 1993 on behalf of NYSDEC as part of the PSA for the Salina Town Landfill Site. Samples were analyzed for a range of parameters, as discussed in Sections 2 and 3 (Ecology and Environment 1994).

1996 NYSDEC Sampling - NYSDEC collected sediment and surface water samples from various locations in Ley Creek in 1996 for analysis for PCBs, VOCs, SVOCs, and inorganic parameters. Selected sediment samples were also analyzed for total organic carbon (TOC).

2. Site investigations

Section 2 presents a summary of the investigative efforts conducted at the site relative to environmental conditions. Media addressed include soil, ground water, storm water, and Ley Creek surface water, sediment, and fish. The site has been divided into eight sub-areas, as shown on Figure 2-1. Sample locations for each of the eight sub-areas are discussed below. Sample locations are identified on Figures 2-2 through 2-8.

2.1. Soil

Facility soil has been evaluated during several investigative programs at the facility. Soil boring installation, trench excavation, subsurface soil sample collection, and surface soil sample collection efforts are discussed in the following subsections.

2.1.1. Soil boring installation

A total of 274 soil borings were completed at or near the facility during the following investigations:

- 1983 Coal Pile Area SPDES Ground Water Monitoring Program
- 1985 EDI Hydrogeological Investigation and Phase II Hydrogeological Investigation
- 1985-1986 EDI Solvent Spill Hydrogeological Investigation
- 1988-1989 O'Brien & Gere Surface Impoundment Post-Closure Ground Water Monitoring Program
- 1990-1991 O'Brien & Gere Ley Creek Relief Interceptor Sewer Area IRM Sampling Program
- 1991 Onondaga County Ley Creek Relief Interceptor Sewer Area Sampling Program
- 1995-1996 CRA Phase II ESA

- 1996 NMPC Factory Avenue Soil Sampling Program
- 1996 O'Brien & Gere Utility Pole Location Sampling Program.
- 1998/1999 O'Brien & Gere Supplemental RI sampling program.

Investigations were generally performed between 1983 and 1999. A summary of soil boring installations during each soil investigation is presented below. A summary of soil boring depths is presented in Table 2-1. Soil boring logs for the 1998/1999 Supplemental RI are included in Exhibit A. Certain soil borings were later converted to ground water monitoring wells, as described in the following sections. A discussion of installation and sampling of ground water monitoring wells is provided in Section 2.2. Soil boring locations for the investigations described herein are presented on Figure 2-3.

1983 Thomsen Associates and Empire Soils Hydrogeologic Investigation. Six soil borings, designated B-1 to B-6, were installed by Thomsen Associates and Empire Soils in the vicinity of the former coal pile for SPDES ground water monitoring well construction. Borings were advanced using a 3¾ inch I.D. hollow stem auger and were terminated at depths of 26.5 ft (B-1), 30.5 ft (B-2), 26.0 ft (B-3), 26.5 ft (B-4), 21.5 ft (B-5), and 26.5 ft (B-6). Monitoring wells were installed within five of the six borings (B-1, B-2, B-4, B-5, and B-6). Remaining well locations are indicated on Figure 2-2 (Thomsen Associates and Empire Soils 1983).

1985 EDI Hydrogeological Investigation. From April 20, 1985 to June 4, 1985, EDI installed a total of thirty-seven borings at the facility. Soil borings were installed using 4-1/4 inch internal diameter (I.D.) hollow stem augers, as follows (EDI 1985a):

- Fourteen soil borings, designated P-1 to P-14, were installed either in, or adjacent to, the backfilled areas around various facility storm sewer pipelines. Ground water monitoring wells designated as "P" wells were installed into the borings. Locations of remaining "P" monitoring wells are indicated on Figure 2-2. At each "P" soil location, a soil boring was advanced adjacent to the storm sewer pipe, within the backfilled zone, until the bottom of the backfilled zone was reached. If the water table was encountered within the backfilled area, a ground water monitoring well was installed. If the water table was below the base of the backfill, the boring was abandoned and backfilled with a cement grout, and a new boring was advanced for installation of a ground water monitoring well outside of the backfilled zone. At selected "P" locations, soil samples were collected as discussed in Section 2.1.3.

- Eighteen soil borings, designated W-1S to W-9S and W-1D to W-9D, were installed as part of the ground water monitoring well series designated as "W" wells, which consisted of ten pairs of deep and shallow wells. Locations of remaining "W" monitoring wells are indicated on Figure 2-2. The shallow borings were installed to the water table. The deep borings were terminated when the underlying lodgement till unit was encountered.

- Three borings, designated U-1S, U-1D, and U-2, were installed to construct "U" series wells which were intended to provide upgradient background data. "U" series wells also consist of pairs of deep and shallow wells. Locations of remaining "U" monitoring wells are indicated on Figure 2-2. Only a deep boring was required due to the shallow depth at which the till was encountered at U-2.

- Two borings, designated WT-1 and WT-3, were installed to construct "WT" wells, which are water table wells. Locations of remaining "WT" monitoring wells are indicated on Figure 2-2.

1985 EDI Phase II Hydrogeological Investigation. From December 5, 1985 to December 12, 1985, a total of twenty-five soil borings were installed at the facility by EDI. Soil borings were installed using 4-1/4 inch I.D. hollow stem augers, as follows (EDI 1986a):

- Eleven borings, designated 003-1 to 003-11, were installed in the vicinity of Outfall 003, as indicated on Figure 2-3, to evaluate the extent of PCB concentrations.

- Six soil borings, designated WT-10 to WT-15, were installed in the area of the IWT plant to provide additional information on the distribution of VOCs in ground water and oil and PCBs in soil. Shallow ground water monitoring wells were installed within these borings. Remaining ground water monitoring wells are shown on Figure 2-2.

- Eight soil borings, designated WT-6 to WT-9, WT-10-S, W-11-S, W-10-D, and W-11-D, were installed in the vicinity of the administration building after TCE was detected in this area during the 1985 Hydrogeological Investigation. Ground water monitoring wells were subsequently installed in the soil borings. Remaining ground water monitoring wells are shown on Figure 2-2.

1985-1986 EDI Solvent Spill Hydrogeological Investigation. During 1985 and 1986, a total of twenty-four soil borings were installed in the area of the former thinner tanks on the west side of the facility to evaluate the extent of thinner present in soil and ground water, as follows (EDI 1986b):

- From April 4, 1985 to April 9, 1985, EDI installed ten soil borings, designated T-1 to T-10, to evaluate the potential extent of thinner in the vicinity of three former underground thinner tanks and related piping. The borings were advanced using 3¾ inch I.D. hollow stem augers and were terminated at a depth of 10 ft below ground surface (bgs). Shallow ground water monitoring wells were subsequently installed within the soil borings. Locations of "T" borings/monitoring wells are indicated on Figures 2-2 and 2-3.

- From March 25, 1986 to March 31, 1986, EDI installed fourteen additional soil borings, designated T-11, T-13, T-15, T-16, T-18, T-21, T-23, T-24, T-25, T-26, T-29, T-30, T-33B and T-34, downgradient of the former thinner tanks. The borings were advanced using 4¼ inch I.D. hollow stem augers and were terminated at a depth of 15 ft bgs. Monitoring wells were installed within ten of the fourteen borings. The remaining four borings were backfilled to the surface with a mixture of natural soil and bentonite. Locations of "T" borings/monitoring wells are indicated on Figures 2-2 and 2-3.

1988-1989 O'Brien & Gere Surface Impoundment Post-Closure Ground Water Monitoring Program Ten soil borings, designated MW-1S to MW-5S and MW-1D to MW-5D, were installed in the vicinity of the surface impoundments in September 1985 for post-closure monitoring well construction. The borings were advanced using 3¼ inch hollow stem auger drilling methods. Monitoring well locations are indicated on Figure 2-2 (O'Brien & Gere 1988, 1992c).

1990-1991 O'Brien & Gere Ley Creek Relief Interceptor Sewer Area IRM sampling program. A series of soil borings were installed along the Ley Creek Relief Interceptor Sewer pipeline route in 1990 to identify the limits of soil excavation and disposal efforts to be conducted as an IRM by GM at the facility. Sixteen borings, designated B-1 to B-16, were installed in April 1990. Two additional borings, B-17 and B-18, were installed on October 5, 1990 and December 20, 1990, respectively. Borings were installed using hollow stem auger drilling techniques as summarized in Table 2-1 (O'Brien & Gere 1990, 1991). Boring locations are indicated on Figure 2-3. Soil samples were collected from these borings, as discussed in Section 2.1.3.

1991 Onondaga County Ley Creek Relief Interceptor Sewer Area Sampling Program. As part of the installation of the Ley Creek Relief Interceptor Sewer in 1991, Onondaga County's contractor installed five soil borings (LC-3 to LC-7) along the pipeline route for collection of samples for analysis for PCBs (Onondaga County 1991). Boring locations are indicated on Figure 2-3. Logs for these borings were not available. Soil samples were collected from these borings, as discussed in Section 2.1.3.

1995-1996 CRA Phase II ESA. From August 3, 1995 to August 11, 1995, forty boreholes were installed by CRA at various locations at the facility. Soil boring locations corresponded with PAOCs identified during the Phase I ESA conducted by Entrix and by GM subsequent to the Phase I ESA, as outlined in Section 1.2.5. From April 1, 1996 to April 12, 1996, CRA installed thirty additional soil borings to address data gaps and better characterize the extent of contamination at certain PAOCs where the August 1995 Phase II ESA had indicated the presence of a contaminant release (*i.e.,* abandoned underground oil sumps and tanks, sumps in former plating area, former paint shop, and storm water sewer trench). Soil borings were advanced by either hand auger or a trailer mounted drill rig utilizing a water-cooled core drill to core through the concrete floor, where appropriate. Soil sample collection is discussed in Section 2.1.3.

A summary of boring locations with respect to PAOCs is presented in Table 2-2. Boring locations are depicted on Figure 2-3, .

1996 NMPC Factory Avenue soil sampling program. A soil sampling program was performed on April 18 and 19, 1996 by NMPC. A total of thirty soil borings were installed adjacent to the north and south sides of Factory Avenue. Nine of the thirty borings were installed on the south side of Factory Avenue in the vicinity of the facility. Boring locations corresponded with five proposed utility pole locations, as well as 25 ft offsets on either side of two proposed locations. Borings were designated by proposed pole location numbers 35, 36E, 36C, 36W, 37E, 37C, 37W, 38 and 39. Borings were installed to a depth of 7 ft bgs. The borings were advanced using a Geoprobe® rig that inserted a hollow Geoprobe® push-rod into the soil to extract samples. Sampling was conducted as described in Section 2.1.3. Soil boring locations are indicated on Figure 2-3 (NMPC 1996).

1996 O'Brien & Gere utility pole location sampling program. On May 30, 1996, O'Brien & Gere installed three soil borings, designated S11, S12 and S13, along the facility's southern property boundary in order to evaluate soil quality prior to the proposed installation of three utility poles to convey a new electrical service to the IWT plant. The soil borings were installed at

160 ft intervals to depths of 5 ft bgs using a 2-3/4 inch outside diameter (O.D.) Geoprobe® sampler with an acetate tube liner. Samples were obtained as discussed in Section 2.1.3. Soil boring locations are depicted on Figures 2-3 and 2-4 (O'Brien & Gere 1996a).

1998/1999 O'Brien & Gere Supplemental RI sampling program. Between July 6 and 22, 1999 18 soil borings were completed, and between October 18 and October 25, 1999, 29 soil borings were completed. The locations of the soil borings are illustrated on Figure 2-3. Soil borings were installed using 4-1/4 inch I.D. hollow stem augers in accordance with the Final Supplemental RI/FS Work Plan, as follows:

- Six soil borings (OBG-TB-15, OBG-TB-14, OBG-TB-5, OBG-TB-19, OBG-TB-1, and OBG-TB-4) were installed in the manufacturing building downgradient of oil/water collection sumps 2, 3, 6, 7, and 8 and the fire protection line. These soil borings were installed to evaluate the nature and extent of soil contamination beneath the manufacturing building.

- Nine soil borings (OBG-TB-2, OBG-TB-3, OBG-TB-6, OBG-TB-7, OBG-TB-8, OBG-PZ-4, OBG-PZ-5, OBG-PZ-6, OBG-PZ-8) were installed in the manufacturing building along abandoned lines leading to oil/water collection sumps 1 and 5 to evaluate the potential presence of NAPL. Four of these borings were completed as piezometers.

- Four soil borings (OBG-TB-12, OBG-TB-13, OBG-TB-16, and OBG-TB-17) were installed in the manufacturing building in the vicinity of the former paint room to evaluate subsurface VOC concentrations that may have resulted from operations in this area.

- Two soil borings (OBG-TB-22 and OBG-TB-23) were installed in the parking lot in the southeast property area to evaluate clean subsurface conditions beneath the parking lot.

- Six soil borings (OBG-TB-30, OBG-TB-31, OBG-TB-32, OBG-TB-38, OBG-TB-43, and OBG-TB- 44) were installed in the IWT plant area. Soil borings OBG-TB-30 and OBG-TB-38 were installed to evaluate subsurface soils in the former TCE storage area. Soil borings OBG-TB-31, OBG-TB-32, OBG-TB-43, and OBG-TB-44 were installed to evaluate subsurface soils in the former fuel tank area. Though only two soil borings were included in the Final Supplemental RI/FS Work Plan to evaluate the former fuel tank area, four borings were installed during soil boring installation activities, due to uncertainty of the location of the tanks. Following installation of the borings, the tank closure report was located and showed that the tanks had been located east of the boring locations. The closure report also indicated that confirmatory samples showed no detections. The report is included as Exhibit F. OBG-TB-38 and well OBG-13 were also installed to evaluate NAPL in this area.

- Four soil borings (OBG-TB-20, OBG-TB-21, OBG-TB-39 and OBG-TB-40) were installed in the vicinity of the mold storage building, in the southwest property area. Soil borings OBG-TB-39 and OBG-TB-40 were installed to evaluate the potential presence of NAPL in the mold storage building area. Soil borings OBG-TB-20 and OBG-TB-21 were installed to evaluate the subsurface in the storage pad area.

- One soil boring (OBG-TB-33) was installed to evaluate background conditions. This boring was installed south of the mold storage area. Though the Final Supplemental RI Work Plan called for analysis of each 2-foot interval, inadvertently only one interval was analyzed from this boring.

- Three soil borings (OBG-TB-45, OBG-TB-46 and OBG-TB-47) were installed in the former thinner tanks area. These soil borings were installed to evaluate potential subsurface contamination in the transformer/switch house area.

- Three soil borings (OBG-TB-24, OBG-TB-36, and OBG-TB-37) were installed in the northeast property area to evaluate clean subsurface conditions beneath the parking lot and evaluate the potential presence of NAPL. Although not required by the Final Supplemental RI Work Plan, two soil borings, OBG-TB-34 and OBG-TB-35, were installed in the vicinity of oil/water collection sumps 1 and 4, respectively. These soil borings were screened for NAPL. Since these borings were not required by the Work Plan, samples from these locations were not analyzed.

- Seven soil borings (OBG-TB-25, OBG-TB-26, OBG-TB-27, OBG-TB-28, OBG-TB-29, OBG-TB-41 and OBG-TB-42) were installed in the northern property area. OBG-TB-25, OBG-TB-26, OBG-TB-27, and OBG-TB-28 were installed to evaluate subsurface conditions resulting from various fill activities in this area. These borings were screened for NAPL and VOCs at 2-foot intervals. Based on observations during field screening activities, and with NYSDEC concurrence, samples were not collected and submitted for analyses at 2-foot intervals as stated in the Final Supplemental RI/FS Work Plan. Instead, three samples were collected from each boring, one at the ground surface, a second immediately above the water table, and a third based on field screening results. OBG-TB-41 and OBG-TB-42 were installed to evaluate NAPL in the vicinity of closed surface impoundment #1. OBG-TB-29 was installed to evaluate the presence of closed surface impoundment #1 beneath the building.

During the 1998/1999 Supplemental RI, soil borings were installed to the following depths, in accordance with the Final Supplemental RI/FS Work Plan: borings installed to evaluate NAPL were installed to the till; borings installed within the manufacturing building to evaluate NAPL were installed to approximately 1 ft below the sewer bedding; the other borings installed site-wide to evaluate subsurface soils were installed to approximately 2 feet into the native soil or to the water table.

Soil boring locations were surveyed in November 1999. The 1998/1999 Supplemental RI soil boring locations are depicted on Figure 2-3.

2.1.2. Trench excavation

1985 EDI Hydrogeological Investigation. On May 14, 1985, four trenches were excavated by backhoe into the edge of the berm between the north building addition and the parking lots on the north side of the facility. The locations are depicted on Figure 2-4. The four locations were selected based on information which indicated these trenches might potentially intercept oil which may have been present on the surface of the ground water and to provide information to assist in evaluating the source. The trenches, which were approximately 9 ft deep, were allowed to stand open for about 6 hrs and were then inspected and backfilled. During trenching activities, fine silt and clay layering in lacustrine sediments and varying ground water depths in each trench were also observed. Trench logs are presented in the 1997 Preliminary RI/FS Report(EDI 1985a).

1998/1999 O'Brien & Gere Supplemental RI Sampling program. On November 1 through 11, 1999, twelve test trenches were excavated by backhoe in the northern property area, in accordance with the Final Supplemental RI/FS Work Plan. Test trenches 1 through 4 were completed to evaluate the limits of the on-site landfill and characterize its contents. Test trenches 5 through 12 were completed to evaluate the location of the former drainage swale. The location of the former drainage swale, limits of the on-site landfill (both based on visual observations during trench installation), test trench locations, and associated samples are depicted on Figure 2-5. Trench logs are presented in Exhibit B.

Test trench soil samples T01-1, T01-2, T01-3, T01-4, T02-1, T02-2, T02-3, T02-4, T03-1, T03-2, T03-3, T03-4, T03-5, T03-6, T04-1, T04-2, and T04-3 were collected from the on-site landfill area using a stainless steel bowl and spoon. T02-1 and T03-2 were submitted to O'Brien & Gere Laboratories, Inc. in Syracuse, New York for a complete TCL/TAL analysis. The remaining soil samples collected from the on-site landfill area were analyzed for VOCs, SVOCs, PCBs, mercury, cyanide, and site-related metals.

Test trench soil samples T05-1, T05-2, T06-1, T07-1, T08-1, T08-2, T08-3, T09-1, T10-1, T11-1, T12-1, and T12-2 were collected from the trenches excavated in the vicinity of the former drainage swale using a stainless steel bowl and spoon. These samples were analyzed for VOCs, SVOCs, PCBs, cyanide and site-related metals by O'Brien & Gere Laboratories, Inc.

2.1.3. Soil sampling and analysis

A summary of soil sampling and analyses conducted during the soil boring activities is described below. Table 2-1 includes a summary of soil samples collected from borings.

1983 Thomsen Associates and Empire Soils Hydrogeologic Investigation. In each of the six soil borings, soil samples were collected at 2 ft intervals using split spoon sampling procedures. Soil samples were visually examined.

1985 EDI Hydrogeological Investigation. Soil sampling during soil boring/monitoring well installation was conducted as follows during EDI's 1985 Hydrogeological Investigation (EDI 1985a). During the "P" well soil boring process, continuous soil samples were obtained with split barrel samplers in accordance with ASTM Method D-1586-84. Fourteen selected "P" well soil samples were selected based on visual examination for the presence of oil and were submitted for analysis for PCBs using USEPA Method 608 by RECRA Environmental Laboratories. Sampled intervals are summarized in Table 2-1.

From the "W" well series, continuous soil samples were obtained in four of the deep borings (W-3D, W-4D, W-7D, and W-8D) and at 5-ft intervals in five of the borings (W-1D, W-2D, W-6D, W-8D, and W-9D). One thin walled tube sample was obtained in accordance with ASTM Method D 1578-83 from each of six deep borings for the purpose of performing undisturbed laboratory vertical permeability analysis (W-1D, W-2D, W-6D, W-7D, W-8D, and W-9D). Deep borings were terminated when the glacial till unit was encountered. In four of the borings, the glacial till was cored with an NX core barrel for the purpose of obtaining relatively undisturbed samples for laboratory determinations of vertical permeability (W-2D, W-6D, W-7D, and W-9D). Vertical permeability testing was conducted according to the protocol presented in Exhibit C of the 1997 Supplemental RI Report by Empire Soils Investigations, Inc. - Thomsen Associates in Groton, New York.

Soil samples collected during the "U" series soil boring installation were obtained at 5-ft intervals in the deep borings; no soil samples were taken in the shallow borings. Samples were not submitted for laboratory analysis.

1985 EDI Phase II Hydrogeological Investigation. Thirty soil samples were collected from the eleven soil borings at various depths in the area of Outfall 003. These samples were analyzed for PCBs and four samples were analyzed for oil and grease using *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (USEPA 1979). Sixteen soil samples were collected from the six soil borings in the area of the IWT plant at various depths. These samples were analyzed for PCBs and oil & grease. Based on information from the first phase of the 1985 EDI Hydrogeologic Investigation, there did not appear to be impacted soil in the area of the administration building. Therefore, no soil samples were collected from the eight soil borings installed in this area (EDI 1986a).

1985-1986 EDI Solvent Spill Hydrogeological Investigation. Soil samples were collected continuously from 1 to 15 ft bgs every 2 ft using a split barrel sampler for soil classification and possible chemical analysis. Soil samples from the initial borings were analyzed either at the facility or in EDI's laboratory by an EDI chemist using a gas chromatograph. Eighty-nine soil samples were analyzed for toluene, ethylbenzene and total xylenes. The results of these analyses were used to evaluate the positions for monitoring well placement (EDI 1986b).

1988-1989 Surface Impoundment Post-Closure Ground Water Monitoring Program During drilling of the ten soil borings, designated MW-1S to MW-5S and MW-1D to MW-5D, soil samples were collected at 5-ft intervals using split barrel sampling procedures according to ASTM Method D-1586-84. Split spoon samples were collected during drilling from the screen intervals of the monitoring wells and at changes in lithology, and were submitted for grain size analyses to Parratt Wolff, Inc., in East Syracuse, New York (O'Brien & Gere 1989a).

1990-1991 O'Brien & Gere Ley Creek Relief Interceptor Sewer Area IRM sampling program. Prior to the 1991 Ley Creek Relief Interceptor Sewer Area IRM, O'Brien & Gere conducted preliminary soil boring and sampling activities. Soil samples were collected continuously from soil borings B-1 through B-16 from a 2 ft depth until native soil was encountered (10 to 12 ft) and submitted for PCB analyses using USEPA Method 8080 by OBG Laboratories, Inc., in Syracuse, New York (O'Brien & Gere 1990).

On October 5, 1990, one soil sample was collected from the 5 -7 ft interval from boring B-17 for waste characterization analysis using USEPA SW-846 Methods and ASTM Methods by Aptus Environmental Services in Coffeyville, Kansas. Analyses included ash, heat of combustion, PCBs, total organic halogen, toxicity characteristic leaching procedure (TCLP) metals, SVOCs, and VOCs. An additional soil sample from the area of B-17 was collected on November 9, 1990 and analyzed for TCLP chromium. Finally, three soil samples from boring B-18 were collected from the 5-7 ft, 7-9 ft, and 9-11 ft intervals and analyzed for TCLP chromium (O'Brien & Gere 1991).

Confirmatory soil sampling was conducted from June 17, 1991 to June 26, 1991 by O'Brien & Gere as part of the Ley Creek Relief Interceptor Sewer Area IRM to evaluate if soil in the vicinity of Onondaga County's proposed 48-inch sewer pipeline met the IRM clean-up criterion for PCBs (10 mg/kg). Following excavation of soil above the proposed sewer pipeline location, confirmatory soil sampling was completed in accordance with the IRM Work Plan (O'Brien & Gere Technical Services 1991). Seven confirmatory soil samples were taken at the base of the excavation at 25 ft intervals using a trowel to dig 12 inches below the base of the pipeline excavation. In addition, four soil samples were collected at the location of borings B-10, B-11, B-12 and B-15. Four additional soil samples were obtained from below the base of the excavation (depths of approximately 16 ft from the road surface) at 50 ft intervals. Sample locations are indicated on Figure 2-3. A total of fifteen grab samples were analyzed for PCBs using USEPA Method 8080 by OBG Laboratories, Inc., in Syracuse, New York (O'Brien & Gere 1990).

1991 Onondaga County Ley Creek Relief Interceptor Sewer Area Sampling Program. In conjunction with installation of the Ley Creek Relief Interceptor Sewer, Onondaga County collected twenty-two soil samples from soil borings LC-3 to LC-7 from various depths up to 14.5 ft. Samples were analyzed for PCBs (Onondaga County 1991). Onondaga County also collected fifteen subsurface soil samples from the pipeline excavation during construction in the vicinity of the Former IFG Facility. Samples were analyzed for PCBs (Onondaga County 1991).

1993 O'Brien & Gere storage cell confirmation sampling program. On October 15, 1993, O'Brien & Gere collected ten confirmatory soil samples from the former soil storage cell area (approximately 200 by 200 ft) located in the northwestern corner of the GM property. Collected with a hand trowel, these ten soil samples were analyzed for PCBs using USEPA Method 8080 by OBG Laboratories, Inc., in Syracuse, New York. Sample locations are indicated on Figure 2-3 (O'Brien & Gere 1994).

1995 - 1996 CRA Phase II ESA. From August 3, 1995 to August 11, 1995, a total of thirty-six soil samples were collected as part of the Phase II ESA. An additional thirty-two soil samples were collected during the April 1996 Phase II ESA activities. Soil samples collected from the borings were visually and texturally logged by a CRA geologist and sent to Galson Laboratories in Syracuse, New York, for specific analysis. Soil samples were analyzed for parameters associated with the PAOC at which they were collected. Soil samples collected and specific analyses conducted are summarized in the soil boring summary in Table 2-1.

1996 NMPC Factory Avenue Sampling Program. At each of the nine boring locations south of Factory Avenue during the NMPC sampling program, continuous soil samples were collected to a depth of 7 ft, with the exception of a 6 ft depth at pole location 37. Continuous soil cores were collected at each location using clear acetate liners inserted into a hollow Geoprobe® push-rod. One composite soil sample was prepared for each boring and analyzed for PCBs using USEPA Method 8080 by Kanti Technologies, Inc. in Amherst, New York. At each of the nine soil boring locations south of Factory Avenue, additional individual soil samples were collected at each 1 ft depth interval. Individual soil samples were visually examined by a geotechnical engineer at Kanti Technologies. Eighteen of the sixty two individual soil samples exhibited color other than brown or grayish brown, and were subsequently considered visually discolored and analyzed for PCBs using USEPA Method 8080 (NMPC 1996).

1996 O'Brien & Gere utility pole location sampling program. O'Brien & Gere collected soil samples from the three soil borings installed at proposed telephone pole locations using a 2¾ inch O.D. Geoprobe® sampler with an acetate tube liner. Samples were obtained in 1 ft intervals to a total depth of 5 ft bgs. Samples were visually examined, and characteristics were logged. A composite sample from each boring was analyzed for PCBs using USEPA Method 8080 by O'Brien & Gere Laboratories, Inc., in Syracuse, New York (O'Brien & Gere 1996a).

1998/1999 O'Brien & Gere Supplemental RI sampling. In accordance with the Final Supplemental RI/FS Work Plan, O'Brien & Gere collected a total of 143 soil samples were collected from 38 soil borings. The locations of the soil borings are illustrated on Figure 2-3. Nine soil borings installed in the manufacturing building (OBG-TB-2, OBG-TB-3, OBG-TB-6, OBG-TB-7, OBG-TB-8, OBG-PZ-4, OBG-PZ-5, OBG-PZ-6, OBG-PZ-8) were used to evaluate the presence of NAPL beneath the manufacturing building using field screening with an ultraviolet lamp. These samples were not submitted for laboratory analyses.

Soil boring OBG-TB-4 was installed inside the manufacturing building to investigate the fire protection line. This sample was originally intended to be installed in the sewer line leading to oil/water collection sump #4, however, because it was clarified based on historical drawings that oil/water collection sump #4 was a blind sump with no sewer lines leading to it, the sample was installed to investigate potential constituent migration along the fire protection line bedding. Samples from this boring were screened for the presence of NAPL and not submitted for laboratory analysis.

Soil samples were collected from soil borings were collected using a 4.25-inch hollow stem auger and split spoon sampler. For soil borings installed in unpaved areas, three samples were selected and submitted to the laboratory for analyses. One sample was collected at the surface (0 to 1 ft), a second was collected immediately above the water table, and a third was collected based on field screening results.

For borings installed in paved areas, two subsurface soil samples were collected. One sample was selected immediately above the top of the water table, and a second sample was selected between the surface and the water table based on field screening results.

For soil samples collected adjacent to oil/water collection sumps #2, 3, 6, 7, and 8 (OBG-TB-15, OBG-TB-14, OBG-TB-5, OBG-TB-19, OBG-TB-1) soil samples were collected at 2-ft intervals down to 1-ft below the sewer backfill materials.

Subsurface soil samples were submitted to O'Brien & Gere Laboratories, Inc. and analyzed in accordance with the Final Supplemental RI/FS Work Plan for constituents including VOCs, SVOCs, PCBs, site-related metals, and cyanide. Samples collected adjacent to oil/water collection sumps (OBG-TB-15, OBG-TB-14, OBG-TB-5, OBG-TB-19, OBG-TB-1) were analyzed for VOCs, SVOCs, PCBs, and site-related metals.

In addition to the samples collected from the 0 to 1 ft sample interval of the soil borings, site surface soil was evaluated during the 1998/1999 O'Brien & Gere Engineers Supplemental RI sampling program, through the collection of surface soil samples. A total of 31 surface soil samples were collected on October 26 and 27, 1999. Surface soil samples were collected using stainless steel spoons, bowls, and trowels, in accordance with the Final Supplemental RI/FS Work Plan. Surface sample locations are depicted in Figure 2-6. Surface soil samples were analyzed as follows:

- Four surface soil samples (SS-99-18, SS-99-19, SS-99-20, and SS-99-21) were collected from the southeast property area to evaluate potential surface soil contamination in this area. Surface soil samples collected from the southeast property area were analyzed for VOCs, PCBs, site-related metals, and cyanide. SS-99-21 was submitted for a complete TCL/TAL analysis.

- Ten surface soil samples (SS-99-22, SS-99-23, SS-99-24, SS-99-25, SS-99-26, SS-99-27, SS-99-28, SS-99-29, SS-99-30, and SS-99-31) were collected from the IWT Plant Area to evaluate potential conditions related to past operations of an incinerator and other waste treatment plant processes in this area. Surface soil samples collected from this area were analyzed for VOCs, SVOCs, PCBs, site-related metals, and cyanide. SS-99-24, SS-99-25, SS-99-26, SS-99-27, and SS-99-31 were also analyzed for chlorinated dioxins and furans. SS-99-24 was submitted for complete TCL/TAL analysis.

- One surface soil sample (SS-99-05) was collected from the former thinner tanks area to provide risk assessment data. This sample was submitted for complete TCL/TAL analysis.

- Four surface soil samples (SS-99-14, SS-99-15, SS-99-16, and SS-99-17) were collected from the northeast property area to obtain risk assessment data in the vicinity of the administration building. These samples were analyzed for VOCs, SVOCs, PCBs, site-related metals, and cyanide. SS-99-17 was submitted for complete TCL/TAL analysis.

- Eight surface soil samples (SS-99-06, SS-99-07, SS-99-08, SS-99-09, SS-99-10, SS-99-11, SS-99-12, and SS-99-13) were collected from the on-site landfill in the northern property area to characterize surface conditions for risk assessment purposes. These samples were analyzed for VOCs, PCBs, site-related metals, mercury and cyanide. SS-99-10 was submitted for complete TCL/TAL analysis.

- Four surface soil samples (SS-99-01, SS-99-02, SS-99-03, and SS-99-04) were collected from the Southwest Property Area to evaluate surface conditions in the vicinity of the hazardous waste storage area. Surface soil samples SS-99-01, SS-99-03, and SS-99-04 were analyzed for

VOCs, SVOCs, PCBs, site-related metals and cyanide. Surface soil sample SS-99-02 was submitted for complete TCL/TAL analysis.

Surface soil samples were analyzed by O'Brien & Gere Laboratories, Inc. in Syracuse, New York. Chlorinated dioxin/furan analyzes were completed by AXYS Analytical Services Ltd. in British Columbia, Canada.

2.2. Ground water

Site ground water has been evaluated during several investigative programs at the site. Ground water monitoring well installation, water level measurements, permeability measurements, *in situ* hydraulic conductivity measurements, and ground water sampling and analyses are discussed in the following subsections.

2.2.1. Monitoring well installations

A total of 121 ground water monitoring wells were installed in the vicinity of the Former IFG Facility and Ley Creek Deferred Media during the following investigations:

- 1983 coal pile area SPDES ground water monitoring program
- 1985 EDI Hydrogeological Investigation and Phase II Hydrogeological Investigation
- 1985-1986 EDI Solvent Spill Hydrogeological Investigation
- 1986-1987 Hydrogeologic Investigation of Fill Area Along Ley Creek
- 1988-1989 O'Brien & Gere Surface Impoundment Post-Closure Ground Water Monitoring Program
- 1988-1989 O'Brien & Gere Ley Creek Dredged Material Area Field Investigation
- 1992 O'Brien & Gere Ley Creek Dredged Material Area RI.
- 1998/1999 O'Brien & Gere Supplemental RI sampling event.

Investigations were generally performed between 1983 and 1999. A summary of the monitoring well installation during each investigation is described below. Monitoring well locations described herein are presented on Figure 2-2. Except where specifically discussed below, monitoring well construction consisted of 2-inch diameter 0.010-inch slot stainless steel screens connected to 2-inch diameter stainless steel pipes. A filter pack of clean medium-grade silica sand was placed around the well screen and extended approximately 1 ft above the top of the screen. A 2 ft bentonite seal was placed above the filter sand, and the remaining annular space was backfilled with a cement-bentonite grout mixture. Locking caps were placed on the riser pipes and curb boxes were installed over the well tops, flush with the ground surface. A summary of monitoring well specifications, including well depth, screened interval, casing materials and other pertinent information, is provided as Table 2-3. Monitoring well construction diagrams for wells installed in 1999 are included in Exhibit A. Monitoring well construction diagrams for wells installed prior to 1999 are included in Exhibit A of the 1997 Preliminary RI/FS Report.

1983 Thomsen Associates and Empire Soils Hydrogeologic Investigation. In 1983, five monitoring wells were installed as part of the SPDES program to monitor ground water quality in the vicinity of the coal yard near the powerhouse. These monitoring wells were designated B-1, B-2, B-4, B-5 and B-6. Remaining well locations are indicated on Figure 2-2. These wells were constructed with a 10 ft length of 2-inch diameter 0.020-inch slot screen connected to a 2-inch Schedule 40 PVC pipe (Thomsen Associates and Empire Soils 1983).

1985 EDI Hydrogeological Investigation. From April 20, 1985 to June 4, 1985, EDI installed a total of thirty-seven monitoring wells at the facility, as follows (EDI 1985a):

- Three monitoring wells, designated U-1S, U-1D and U-2, were installed near the southern portion of the facility to evaluate ground water quality hydraulically upgradient of the Former IFG Facility. Monitoring well U-1S was positioned to intersect the water table, and monitoring well U-1D was positioned to screen the most permeable zone within the lacustrine deposits. Monitoring well U-2 fully penetrates the lacustrine deposits due to the shallow depth at which till was encountered. Screen lengths were 5 ft for U-1S and 10 ft for U-1D and U-2.

- Two shallow monitoring wells, designated WT-1 and WT-3, were installed to investigate shallow ground water quality near the IWT plant and the east side of the manufacturing building, respectively. The "WT" wells are positioned to intersect the water table, and were constructed with 5-ft lengths of screen.

- Fourteen monitoring wells, designated P-1 to P-14, were installed at various locations at the facility to evaluate ground water quality associated with the backfilled areas around the various facility storm sewers. The "P" wells are positioned to intersect the water table, and were constructed with 5-ft lengths of screen.

- Eighteen monitoring wells, designated W-1S to W-9S and W-1D to W-9D, were installed to investigate shallow and deep ground water across the facility. The shallow "W-S" monitoring wells are positioned to intersect the water table, and the deep "W-D" monitoring wells are positioned to screen the most permeable zone within the lacustrine deposits. Screen lengths were 5 ft for the shallow wells and 10 ft for the deep wells.

1985 EDI Phase II Hydrogeological Investigation. From December 5, 1985 to December 12, 1985, a total of fourteen ground water monitoring wells were installed at the facility by EDI, as follows (EDI 1986a):

- Eight monitoring wells, designated WT-6 to WT-9, and W-10-S, W-10-D, W-11-S and W-11-D, were installed in the vicinity of the administration building after TCE was detected during the 1985 Hydrogeological Investigation in this area. The shallow "WT" and "W-S" monitoring wells are positioned to intersect the water table, and the deep "W-D" monitoring wells are positioned to screen the most permeable zone within the lacustrine deposits.

- Six monitoring wells, designated WT-10 to WT-15, were installed in the area of the IWT plant to provide additional information on the distribution of VOCs in ground water, and oil and PCBs in soil. The shallow "WT" monitoring wells are positioned to intersect the water table.

The "WT" and "W" wells were constructed with 2-inch diameter, 0.010 inch slot stainless steel screens and 2-inch diameter galvanized steel casing. Screen lengths were 5 ft for the shallow wells and 10 ft for the deep wells. A filter pack of clean, medium-grade silica sand was placed around the well screen and extended approximately 1 ft above the top of the screen. A 2-ft bentonite pellet seal was placed above the filter sand, and the remaining annular space was backfilled with a bentonite and natural soil mixture. A flush-mount locking cap was placed on each well.

1985-86 EDI Solvent Spill Hydrogeological Investigation. During 1985 and 1986, a total of twenty monitoring wells were installed by EDI in an area on the west side of the facility to evaluate the extent of thinner present in soil and ground water, as follows (EDI 1986b):

- From April 4, 1985 to April 9, 1985, EDI installed ten monitoring wells, designated T-1 to T-10, to evaluate the potential extent of thinner in the vicinity of three former underground thinner tanks and related piping. Well construction information for wells T-1 to T-10 could not be located.

- From March 25, 1986 to March 31, 1986, EDI installed ten additional monitoring wells, designated T-11, T-13, T-15, T-18, T-21, T-24, T-26, T-29, T-33B and T-34, downgradient of the former thinner tanks. The "T" wells are positioned to intersect the water table to allow for evaluation of the presence of floating product, and were constructed with 5-ft length screens.

1986-1987 O'Brien & Gere Hydrogeological Investigation of Fill Area Along Ley Creek. Nine ground water monitoring wells were installed to the south of Ley Creek between November 10 and November 24, 1986. Monitoring wells OBG-1, OBG-2, OBG-3, OBG-5, and OBG-6 were installed adjacent to Ley Creek at approximately 300 ft intervals. Monitoring wells OBG-4, OBG-7A, OBG-7B, and OBG-7C were located in the vicinity of the former drainage swale which drained the facility holding pond. Locations were selected based on a 1975 aerial photo which identified the location of this former drainage swale bisecting the study area. Monitoring well OBG-7A was installed in the approximate center of the former drainage ditch, while OBG-4, OBG-7B, and OBG-7C extended laterally away from OBG-7A and were installed at 50 ft intervals (O'Brien & Gere 1987a). Well locations are identified on Figure 2-2.

The wells were installed in the fill material immediately above the natural silty clay. The monitoring wells were installed to a depth of approximately 9 ft, with the exception of OBG-6, which was installed to a depth of 17 ft. The wells in the vicinity of the former drainage swale were installed using 4¼ inch I.D. hollow stem auger drilling methods, and were constructed using a 3 ft length of 2 inch diameter, 0.020 inch slot, stainless steel screen connected to a 2 inch galvanized steel riser. The remaining wells were constructed using a 5 ft length of 2 inch diameter, 0.020 inch slot, stainless steel screen and galvanized riser (O'Brien & Gere 1987a).

1988-1989 O'Brien & Gere Surface Impoundment Post-Closure Ground Water Monitoring Program. During September 1988, ten monitoring wells were installed adjacent to the two surface impoundments located north of the manufacturing building. These wells, which consisted of five pairs of shallow/deep nested wells, were installed as part of the surface impoundment post-closure monitoring program and were designated MW-1S to MW-5S and MW-1D to MW-5D. The shallow "MW-S" monitoring wells are screened at the water table interface, and the deep "MW-D" monitoring wells are screened immediately above the lacustrine/till interface. Shallow wells MW-1S, MW-2S, MW-4S, and MW-5S were positioned such that a portion of each well screen was not submerged in order to detect light non-aqueous phase liquids at the water table, if present. The "MW" wells were constructed with 2-inch diameter, 0.020 inch slot wire wound stainless steel screens and 2-inch diameter stainless steel well casings. Screen lengths were 5 ft for the deep wells and shallow wells MW-1S and MW-2S, and 10 ft for shallow wells MW-3S, MW-4S, and MW-5S. The annular space around the well screen was packed with a silica sand, and the annular space above the sand pack was sealed with a cement-bentonite grout. Protective steel casings and locks were placed on the riser pipes (O'Brien & Gere 1988, 1989a, 1992c).

1988-1989 O'Brien & Gere Ley Creek Dredged Material Area Field Investigation. During the 1988/1989 Ley Creek Dredged Material Area field investigation, six ground water monitoring wells were installed between Townline Road and the Town of Salina Garage, to the west of the monitoring wells installed during the 1986-1987 hydrogeologic investigation. Five of the wells, designated as MW-8 to MW-13, were installed along the south side of Ley Creek. One well, MW-11, was installed along the south side of Factory Avenue to serve as an upgradient monitoring point. Well locations are indicated on Figure 2-2. Wells were installed using 4¼-inch I.D. hollow stem auger drilling methods and were constructed using a 10 ft length of 2 inch diameter, 0.010 inch wire wound stainless steel screen connected to a 2 inch stainless steel riser pipe (O'Brien & Gere 1989b).

1992 O'Brien & Gere Ley Creek Dredged Material Area RI. From July 21 to July 24, 1992, two deep ground water monitoring wells were installed at the Ley Creek PCB Dredgings site to evaluate ground water quality and flow conditions at the top of bedrock. The wells, designated OBG-3D and MW-9D were installed using 4¼ inch hollow stem augers and were constructed using a 5 ft length of 2 inch diameter, 0.01 inch stainless steel screen connected to a 2 inch stainless steel riser pipe (O'Brien & Gere 1993).

1998/1999 O'Brien & Gere Supplemental RI sampling. From July 6 through 22, 1999 and from September 28 through October 13, 1999, O'Brien & Gere installed 18 ground water monitoring wells in accordance with the Final Supplemental RI/FS Work Plan. The locations of the new monitoring wells are illustrated on Figure 2-2. Monitoring wells were constructed of two-inch PVC riser pipe and 0.010 inch slotted PVC screen. Shallow wells were constructed with 10 feet of screen and deep wells were constructed with 5 feet of screen, with one exception. OBG-15 was screened from 13.0 - 5.0 feet below grade due to the shallow depth of the glacial till unit. Monitoring wells were installed as follows:

- Three monitoring wells designated as MWI-1, MWI-2, and MWI-3 were installed in the manufacturing building. MWI-1 was installed downgradient of the mold storage building and upgradient of the paint room and administration building to evaluate the presence of a continuous solvent plume. MWI-2 was installed to evaluate elevated petroleum hydrocarbon concentrations in the vicinity of the abandoned storm sewer line leading to oil/water collection sump #5. MWI-3 was installed in the vicinity of the abandoned storm sewer line leading to oil/water collection sump #4, in the vicinity of the process sewer line leading to the acid/alkali bunker, and downgradient of the paint room. The Final Supplemental RI/FS Work Plan stated that these monitoring wells were to be installed as shallow/deep overburden wells nests. However, since till was encountered at a depth of approximately 15 ft below grade, only one well was installed at each location, with the concurrence of NYSDEC's representative in the field.

- Monitoring well WT-3R was installed outside the manufacturing building just downgradient of the abandoned storm sewer line leading to oil/water collection sump #5, and served as a replacement well for WT-3, which had not been installed to the top of till. The Final Supplemental RI/FS Work Plan stated that WT-3R was to be installed as a deep overburden well to be nested with WT-3. However, since till was encountered at a depth of approximately 15 ft below grade, WT-3R was considered a replacement well for WT-3, with the concurrence of NYSDEC's representative in the field.

- Two deep overburden monitoring wells (OBG-12, OBG-13) were installed in the vicinity of two shallow overburden monitoring wells in the IWT Plant Area. These wells were installed to evaluate potential ground water contamination which may have originated from operation of the IWT plant. In accordance with the Final Supplemental RI/FS Work Plan, these wells were to be installed as deep overburden wells nested with existing shallow overburden wells (WT-15 and P-14). However, because the glacial till unit was encountered at less than 15 ft, OBG-12 and OBG-13 served as replacement wells for WT-15 and P-14.

- Two monitoring wells (OBG-11 and OBG-15) were installed in the Southwest Property Area. Monitoring well OBG-15 was installed in the vicinity of the mold storage building and hazardous waste storage area in order to evaluate potential contamination resulting from storage of TCE and plating chemicals (mold storage building) and hazardous wastes including solvents and degreasers (storage area). OBG-11 was installed to evaluate upgradient ground water quality.

- One shallow/deep overburden well nest (OBG-10S, OBG-10D) was installed in the northeast property area north of the manufacturing building to evaluate potential ground water conditions that may be related to former operations in the manufacturing building.

- Four shallow/deep well nests (OBG-6S, OBG-6D, OBG-7S, OBG-7D, OBG-8S, OBG-8D, OBG-9S, OBG-9D) were installed in the northern property area to evaluate ground water conditions.

- As stated in the Final Supplemental RI/FS Work Plan, two top of bedrock monitoring wells were to be installed to evaluate background ground water conditions in different ground water zones. However, the two borings (OBG-11R and OBG-14R) were not completed as top of bedrock ground water monitoring wells due to the thickness of the glacial till unit encountered during advancement of OBG-11R. With concurrence of NYSDEC, the boreholes were abandoned and grouted, and top of bedrock wells were not installed.

Current monitoring well status. Certain ground water monitoring wells at the site installed during the various investigations described in this section have been destroyed during construction activities or buried during filling activities. O'Brien & Gere performed a well location survey on September 20, 1996 to identify which monitoring wells were still accessible at the site. Of the 103 wells located at the site at that time, the following 19 wells were not located during this investigation or in the subsequent 1998 site survey: P-4, P-6, P-7, P-8, P-10, P-11, W-3S, W-4S, W-4D, W-5S, W-5D, W-7S, W-7D, WT-1, WT-7, B-1, B-2, B-4, and B-5.

Since the Supplemental RI sampling event, monitoring wells OBG-3 and OBG-7A have been removed as part of the Ley Creek Remedial Action. In addition, monitoring wells OBG-3, OBG-4, OBG-5, OBG-6, and OBG-7B, located at the Ley Creek PCB Dredgings site were also abandoned as part of the Ley Creek Remedial Action.

2.2.2. Water level measurements

In accordance with the Final Supplemental RI/FS Work Plan, ground water elevation measurements were obtained from 64 monitoring wells and six piezometers on November 1, 1999. Casing and ground water elevations are summarized on Table 3-1. Shallow and deep ground water elevation maps prepared using data collected on November 1, 1999 are included as Figures 3-3 and 3-4, respectively. A discussion of ground water elevation data is presented in Section 3.

In November 1999, 18 new wells and 6 piezometers were surveyed. In addition, 11 existing wells were surveyed at that time. The sources of survey data are also summarized on Table 3-1.

2.2.3. Permeability measurements

1985 EDI Hydrogeological Investigation. Vertical permeability values were measured in the laboratory on four undisturbed core samples of lacustrine deposits (from W-1D, W-2D, W-7D and W-9D) and three relatively undisturbed core samples of lodgement till (W-2D, W-6D, and W-9D). Vertical permeability testing was performed using a triaxial testing apparatus according to the protocol presented in Exhibit C of the 1997 Preliminary RI/FS Report by Empire Soils Investigations, Inc. - Thomsen Associates in Groton, New York (EDI 1985a).

2.2.4. *In situ* hydraulic conductivity measurements

In situ hydraulic conductivity testing was conducted for various monitoring wells in the vicinity of the site during different investigations to collect data to estimate ground water flow volumes and velocities. Tests were performed by evacuating a volume of water from the well, thus creating a hydraulic head difference between the well and the surrounding aquifer. The rate of recovery of the water level was then measured in the well. This recovery rate is a function of the hydraulic conductivity of the aquifer. Hydraulic conductivity testing efforts are discussed as follows, and field logs for testing efforts conducted for the 1998/1999 Supplemental RI are included in Exhibit C. Hydraulic conductivity field logs for testing efforts conducted prior to 1999 are included in Exhibit C of the 1997 Preliminary RI/FS Report. Hydraulic conductivity data are discussed in Section 3.

1983 Thomsen Associates and Empire Soils Hydrogeologic Investigation. On July 11, 1983, falling and rising head slug tests were performed on wells B-1, B-2 and B-4, in accordance with Bouwer and Rice methodology (Bouwer and Rice 1976) (Thomsen Associates and Empire Soils 1983).

1985 EDI Hydrogeological Investigation. Field slug tests were performed on monitoring wells U-1D, W-1D, W-2D, W-3D, W-4D, W-5D, W-7D, W-8D and W-9D to measure horizontal permeability of the deeper lacustrine deposits. Falling and rising head slug tests were performed in accordance with Bouwer and Rice methodology (Bouwer and Rice 1976) (EDI 1985a).

1986-1987 O'Brien & Gere Hydrogeologic Investigation of Fill Area Along Ley Creek. O'Brien & Gere completed *in situ* hydraulic conductivity tests in November 1986 at nine wells installed during the hydrogeologic investigation (OBG-1 to OBG-6, OBG-7A, OBG-7B, and OBG-7C). The collected data were interpreted using Hvorslev's formula to evaluate the hydraulic conductivity of the aquifer material at each well location (O'Brien & Gere 1987a).

1988-1989 O'Brien & Gere Surface Impoundment Post-Closure Monitoring Program. *In situ* hydraulic conductivity tests were performed on monitoring wells installed as part of the surface impoundment post-closure monitoring program. The tests were performed on monitoring wells MW-1S to MW-5S and MW-1D to MW-5D in November 1988. The collected data were interpreted using Hvorslev's formula to evaluate the hydraulic conductivity of the aquifer material at each well location (O'Brien & Gere 1989a).

1988-1989 O'Brien & Gere Ley Creek Dredged Material Area Field Investigation. O'Brien & Gere completed *in situ* hydraulic conductivity tests in April 1989 at the six wells installed during the field investigation (MW-8 to MW-13). The collected data were interpreted using Hvorslev's formula to evaluate the hydraulic conductivity of the aquifer material at each well location (O'Brien & Gere 1989b).

1998/1999 O'Brien & Gere Supplemental RI sampling. O'Brien & Gere conducted *in situ* hydraulic conductivity tests at six wells installed during the 1998/1999 Supplemental RI sampling program (OBG-7S, OBG-7D, OBG-9S, OBG-11, MWI-2, MWI-3S). The collected data were interpreted using the Bouwer-Rice formula to estimate the hydraulic conductivity of the aquifer material at each well location. Hydraulic conductivity data are included in Table 3-2. Permeability field logs are presented in Exhibit C.

2.2.5. Ground water sampling and analysis

Ground water sampling and analysis activities were performed in the vicinity of the Former IFG Facility and the Ley Creek Deferred Media during the course of various investigations conducted between 1983 and 1999. In order to provide the most current and complete ground water conditions, sampling conducted as part of the 1998/1999 Supplemental RI is included in this report. Investigations conducted prior to 1999 are documented in the 1997 Preliminary RI/FS Report.

As part of O'Brien & Gere Supplemental RI sampling efforts, ground water sampling and analysis activities were performed at the Former IFG Facility and Ley Creek Deferred Media Site on July 8 and 19, 1999, August 17 and 18, 1999, and November 2 through 11, 1999 to evaluate the nature and extent of ground water contamination. Ground water samples were collected in accordance with the Final Supplemental RI/FS Work Plan.

During the July 8, 1999 sampling event, ground water samples were collected from piezometers OBG-PZ-1, OBG-PZ-2, and OBG-PZ-3. Piezometer OBG-PZ-7 was sampled on July 19, 1999. Monitoring wells MWI-1, MWI-2, MWI-3, and WT-3R were sampled on August 18, 1999. Between November 2 and 11, 1999, 54 monitoring wells, including 14 new wells and 40 existing wells, were sampled. Ground water sampling logs for the Supplemental RI sampling program are included in Appendix B.

Ground water samples were collected using the low flow purging protocol. Low flow purging techniques were used in order to minimize turbidity in the ground water samples. In instances where the wells were pumped dry, samples were collected the following day, with the exception of monitoring wells T-18, T-33B, and P-5 that exhibited insufficient quantities of water for sample collection. The low flow purging techniques were unsuccessful for monitoring wells OBG-13 and OBG-15. These wells were purged on November 10, 1999 and on November 11, 1999, samples were collected. In OBG-13, turbidity increased prior to the collection of the metals sample. Therefore, filtered and unfiltered metals samples were submitted for analysis. Monitoring well OBG-15 remained turbid during purging and sampling. Therefore, samples for analyses that are affected by turbidity, (*i.e.*, PCBs, metals, and cyanide) were filtered. Filtered and unfiltered PCBs, metals, and cyanide samples from OBG-15 were submitted for analysis.

With NYSDEC concurrence, the low flow purging protocol was not used for monitoring wells MWI-1, MWI-2, MWI-3, and WT-3R due to a low ground water recovery rate. Instead of the low flow purging method, these wells were purged dry, allowed to recharge, and samples were collected within a 24-hour period.

Ground water samples were not obtained from monitoring wells WT-15, P-14, and WT-3 because new wells (OBG-12, OBG-13, and WT-3R) served as replacements for these wells.

Samples collected from the monitoring wells were submitted to O'Brien & Gere Laboratories, Inc. in Syracuse, New York and analyzed as follows:

- Fourteen wells from the thinner spill area (T-1, T-2, T-3, T-4, T-5, T-10, T-13, T-15, T-18, T-21, T-24, T-26, T-29, and T-33B) were analyzed for ethylbenzene, toluene, and xylene using EPA Method 8021. These wells were sampled as part of the routine quarterly thinner area monitoring program that was scheduled to coincide with the Supplemental RI sampling activities.

- One well from the thinner spill area (P-9) was analyzed for VOCs, SVOCs, PCBs, site-related metals, and cyanide.

- Ten wells from the surface impoundment area (MW-1S, MW-1D, MW-2S, MW-2D, MW-3S, MW-3D, MW-4S, MW-4D, MW-5S, MW-5D) were analyzed for VOCs and PCBs. These wells were sampled as part of the routine semi-annual surface impoundment monitoring program that was scheduled to coincide with the Supplemental RI sampling activities.

- Four piezometers located inside the manufacturing building, in the thinner spill area, (OBG-PZ-1, OBG-PZ-2, OBG-PZ-3, OBG-PZ-7) were analyzed for VOCs using EPA Method 8260.

- Thirty-three site wide wells (U-1S, U-1D, P-2, W-11S, W-11D, W-6S, W-6D, P-5, W-1S, W-1D, OBG-2, OBG-3, OBG-3D, OBG-5, OBG-7A, OBG-6S, OBG-6D, OBG-7S, OBG-7D, OBG-8S, OBG-8D, OBG-9S, OBG-9D, OBG-10S, OBG-10D, OBG-11, OBG-12, OBG-13, OBG-15, MWI-1, MWI-2, MWI-3, and WT-3R) were analyzed for VOCs, SVOCs, PCBs, site-related metals, and cyanide. Monitoring wells OBG-2, OBG-3, OBG-3D, OBG-5, and OBG-7A are located at the Ley Creek PCB Dredgings Site. Since the Supplemental RI sampling event, monitoring wells OBG-3 and OBG-7A have been removed as part of the Ley Creek Remedial Action. In addition, monitoring wells OBG-3, OBG-4, OBG-5, OBG-6, and OBG-7B were also abandoned as part of the Ley Creek Remedial Action.

Ground water monitoring well locations are presented on Figure 2-2. Ground water analytical data are discussed in Section 3.3.

2.3. Storm water

Facility storm water has been evaluated as part of various investigations. Storm sewer televising and storm water sampling and analysis are discussed in the following sections.

2.3.1. Sewer televising

From September 8 to 11, 1992, a sewer televising program was performed on the facility storm sewer system associated with Outfall 004. This storm sewer runs from the southeast portion of the GM property, through mainly parking lots, and exits the property on the northern property boundary at approximately the corner of Townline Road/Factory Avenue/GM Circle. This location is know as Outfall 004. The sewer, reportedly owned by Onondaga County, conveys storm water flow from off-site sources located south of the GM property. The sewer also drains the parking lots located on the east side of the GM property. No connections from the facility to this sewer are known to exist. The sewer is constructed of concrete and ranges from 8 to 36 inches in diameter. The specific age of the sewer is unknown. The location of the storm sewer is depicted on Figure 1-9.

The sewer televising program was conducted to inspect the inside of the sewer pipe for integrity and to assess if unknown connections originating from the facility side of the sewer existed. The televising program was performed by O'Brien & Gere and Scan-n-Seal Environmental Services of Syracuse, New York. Televising activities were performed from upstream to downstream by a towed camera. The camera was towed through each reach of sewer pipe by a cable and winch. The cable was pulled through each reach of sewer by a hydraulically driven apparatus. The camera was used to prepare a video tape and written log of the inspection.

2.3.2. Storm water sampling and analysis

1985 EDI Hydrogeological Investigation. Storm water sampling and analysis activities were performed by EDI on June 7, 1985, which included the collection and analysis of four storm water samples, designated S-1, S-2, S-3 and S-4. These samples were collected from the storm sewers located along the facility's southern property boundary in order to evaluate the quality of storm water flowing onto the facility property. Sample locations are indicated on Figure 1-8. Samples were collected with decontaminated stainless steel bailers, with the exception of S-4, where sample bottles were submerged directly into the flow and filled. The samples were analyzed by EDI's laboratory in Grand Rapids, Michigan, for priority pollutant volatiles

(USEPA Method 624 or 601) and base neutrals, acid extractables, and pesticides (USEPA Method 625) (EDI 1985a).

1987 O'Brien & Gere Storm Outfall Assessment. Storm water sampling and analysis activities were performed by O'Brien & Gere in late May and early June 1987. These activities were performed to assess the relationship between rain events and concentrations of certain constituents within storm sewer outfalls at the facility. Rainfall characteristics such as storm frequency, duration, intensity and total rainfall were measured for later comparison against the concentrations of constituents detected in the storm water.

The sampling activities were originally scheduled to be performed in April 1987; however, due to unusually dry conditions, the samples were collected during storm events on May 22, May 28, June 3 and June 8, 1987. Storm water samples were collected from the following four locations, depicted on Figure 1-8, to characterize the storm water flows entering and leaving the property, as described below:

- Site 1 consisted of a manhole located just upstream of Outfall 004. This outfall discharges into Ley Creek near the intersection of Townline Road and Factory Avenue, and drains the eastern side of the facility, which consists mainly of paved parking areas.

- Site 2 consisted of a manhole located upstream of Outfall 003. Outfall 003 is located approximately 500 ft west of Outfall 004 along the facility's northern property boundary. The selected sampling location was a manhole located upstream of the outfall at the location where two 42-inch sewers converge.

- Site 3 consisted of the upstream-most sampling location on the storm sewer system tributary to Outfall 003, and sampling site 2. Site 3 was a manhole located just north of the railroad tracks which run along the facility's southern property boundary. This location did not contain flows or storm water inputs from the facility; therefore, this was considered to be a baseline for comparison to other sites.

- Site 4 consisted of a manhole located at the upstream extent of the storm sewer system tributary to Outfall 004, and sampling site 1. Site 4 was a manhole located near the southeastern portion of the property. As with Site 3, none of the flows entering this manhole contained inputs from the facility. However, the upstream portion of this sewer does serve a highly industrialized area south of the facility property.

The sampling methodology used during the sampling events was designed to retrieve grab samples over the duration of the storm with the emphasis on first flush conditions. To achieve the objective of collecting time-varied discrete samples at each site, a schedule was established, which was used for the duration of each storm, as follows:

Table 2-4. *Storm outfall assessment sampling schedule.*

Time (hr)	Sample #
0	1
0.5	2
1	3
2	4
3	5
4	6

Source: O'Brien & Gere Engineers, Inc. 1987b

This schedule was used at the four sampling sites for the duration of the storm events, except that none of the storm events lasted as long as the 4 hr duration identified in the sampling schedule. For each event, sampling was terminated when flows in the sewers returned to near-dry weather flow conditions. A summary of the total number of samples collected follows:

Table 2-5. *Storm outfall assessment sampling summary.*

Date	Site 1	Site 2	Site 3	Site 4	Total
05/22/87	3	3	3	3	12
05/28/87	5	5	4	4	18
06/03/87	3	3	3	3	12
06/08/87	3	3	3	3	12
Total	14	14	13	13	54

Source: O'Brien & Gere Engineers, Inc., 1987b.

The storm water samples were collected and transported to OBG Laboratories, Inc. (currently O'Brien & Gere Laboratories), in Syracuse, New York for laboratory analysis. Laboratory analysis consisted of a phased approach, with a broad list of analytes during the first sampling event and a focused list during subsequent storm events. Analytes (including metals) chosen for analysis during subsequent storm events were based on the detections during the first event, historic detections, and constituents potentially discharged as part of operations at the Former IFG Facility. Analyses are described as follows (O'Brien & Gere 1987b).

- Samples collected during the first storm event (May 22, 1987) were analyzed for PCBs/pesticides, metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium and zinc), cyanide, VOCs by USEPA Method 601, acid extractables/base neutrals and phenols. Unless otherwise specified, laboratory analysis was completed using methodology described in 40 CFR Part 136 dated October 26, 1984.

- Samples collected during the second, third and fourth storm events (May 28, 1987, June 3, 1987, and June 8, 1987, respectively) were analyzed for PCBs, lead, copper, zinc, cyanide, VOCs by USEPA Method 503 and acid extractables/base neutrals. Unless otherwise specified, laboratory analysis was completed using methodology described in 40 CFR Part 136 dated October 26, 1984.

In general, the sampling parameters were selected based on either the potential for historic impacts to storm water quality from facility operations or their presence in the first sample event or previous facility investigations.

Rainfall data were obtained form the National Weather Service for a rain gauge station at Hancock Field north of Syracuse. Based on rainfall data, storm water flows were calculated using the Rational Method, and discharge hydrographs were developed for each of the storm events sampled. Using this information as well as the analytical data obtained from the laboratory, pollution loading graphs were developed (O'Brien & Gere 1987b). Results of these efforts are discussed in Section 3.

1989 O'Brien & Gere Storm Sewer Sampling Summary. During the summer of 1989, additional storm sewer sampling activities were performed at the facility to evaluate potential sources of PCBs and TCE within the recently modified storm sewers. The storm sewer system at the facility was modified in 1988 following the 1987 storm outfall assessment, which identified the presence of storm water impacted by PCBs and other constituents. Modifications included rehabilitation of sewers outside the facility by either sliplining, installation of a cured in place liner (Insituform®) or installation of sections of new storm sewer. The sampling locations, indicated on Figure 1-8, were as follows (O'Brien & Gere 1989c):

- Site A1A was a manhole located upstream of Outfall 003, just downstream of the point where two 42-inch sewers converge.
- Site A3 was a manhole located on the west side of the facility in a tributary to Outfall 003. This manhole represents the western portion of the storm sewer system, downstream of a section of 40 inch diameter concrete pipe which had been rehabilitated using resin liner. This manhole is also downstream of a line which discharges roof drainage form the 1975 building addition.
- Site BA1 was a manhole located upstream of Outfall 003 in the part of the storm water system which serves the middle portion of the facility, including many of the roof drains in the manufacturing building.
- Site B2 was a manhole located upstream of Outfall 003 on the section of sewer serving the eastern side of the facility.
- Manholes located on the western and southwestern sides of the facility, generally designated A1 through A13.

The sampling events are described as follows (O'Brien & Gere 1989c):

- Sampling event 1 was performed on March 17, 1989, during dry weather. Grab samples of dry weather flow were collected from four sampling locations (Sites A1A, A3, BA1, and B2) and transported to OBG Laboratories in Syracuse, New York for laboratory analysis of PCBs.

- Sampling event 2 was performed on May 2, 1989, during a light rain. Nine samples were collected from the portion of the storm sewer system located at the southwestern corner and west side of the facility (manholes A3 to A11), as indicated on Figure 1-8. The intent of this sampling was to attempt to identify the potential source of PCBs from the southwestern corner of the facility. Two samples (A8 and A9) were submitted for analysis for PCBs by OBG Laboratories in Syracuse, New York.

- Sampling event 3 was performed on May 17, 1989, during dry weather. Five samples were collected from the portion of the storm sewer system located at the southwestern corner and west side of the facility. Samples were collected from manholes A4, A8, and A9, as well as from the western influent to A1 (A1-W) and the eastern influent to A1 (A1-E), as indicated on Figure 1-8. The intent of this sampling was to evaluate the potential source of TCE. The five samples were submitted for analysis of VOCs by USEPA Method 601/602 by OBG Laboratories in Syracuse, New York.

- Sampling event 4 was performed over a three day period (June 9, 12 and 13, 1989). The first two days were dry; however, the third was rainy. The target sampling areas consisted of an area west of the manufacturing building near the paint mix room and the southwestern corner of the facility. On June 9, 1989, ten samples were collected from manholes A4, A5, A7, A8A, A8B, and A9; an abandoned section of sewer upgradient of A4; a catch basin which connects into A4; and oil/water collection sump #7. Sampling locations are depicted on Figure 1-8. The samples were submitted for analysis of PCBs, VOCs by USEPA Method 601/602, total suspended solids (TSS) and oil and grease by OBG Laboratories, Inc, in Syracuse, New York. Field measurements of pH were also obtained from each location. On June 12 and June 13, 1989, the storm sewers at the southwestern corner of the facility were again targeted for the purpose of further isolating PCB impacts. Manholes A8, A8A, A8B and A9 were sampled on both occasions, and samples were analyzed by OBG Laboratories, Inc., in Syracuse, New York for PCBs.

- Sampling event 5 was performed on July 24, 1989, during dry conditions. The intent of this sampling was to further evaluate the source of PCBs in the storm sewer. Four samples were collected from manholes A9, A10, A11, and A12, and submitted for analysis of PCBs by OBG Laboratories in Syracuse, New York. Sampling locations are depicted on Figure 1-8.

- Sampling event 6 was performed on August 25, 1989. This sampling event was performed to obtain further information of the potential source of TCE impacts to storm water on the western side of the facility. Three samples were collected from manholes A5, A6 and A7, and submitted to O'Brien & Gere Laboratories in Syracuse, New York, for analysis of VOCs by USEPA Method 601/602. Sampling locations are depicted on Figure 1-8.

1992 O'Brien & Gere Ley Creek Dredged Material Area RI. On August 13, 1992, sampling was performed on Outfall 003 as part of the Ley Creek Dredged Material Area RI. The sampling program consisted of the collection of four outfall discharge water samples during the course of a rain event. The intent of the sampling event was to evaluate potential contributions of PCBs to Ley Creek from storm events. A sediment sample was also obtained from the outfall pipe itself.

The discharge samples were collected over the course of a 2 hr period during a rain event on August 13, 1992, and were collected from the end of the metal erosion plates, approximately 15 to 20 ft from the concrete discharge pipe protruding from the north side of Factory Avenue. The sediment sample was collected from the first metal erosion plate located where the concrete discharge pipe discharges from beneath Factory Avenue. Field measurements were performed for temperature, pH and specific conductance for each water sample. The samples were submitted to H2M Laboratories in Melville, New York for analysis of PCBs by NYSDEC ASP Method 91-3. Quality assurance/quality control (QA/QC) sample collection and analyses were performed in accordance with the ASP (O'Brien & Gere 1993).

1995-1996 Outfall 004 sewer line sampling program. During 1995 and 1996, a sampling program of the storm sewer line associated with Outfall 004 was performed. This program was prompted by detections of PCBs in routine water sampling performed at Outfall 004. The sampling program consisted of collection and analysis of storm water samples using a phased approach, as described below. Sample locations are indicated on Figure 1-8.

- On November 21, 1995, a sample of the influent water at the facility's southeastern property boundary (manhole C10) was collected. A sample of the discharge at Outfall 004 was then collected. The samples were submitted to O'Brien & Gere Laboratories in Syracuse, New York for analysis of PCBs by USEPA Method 8080;

- On April 12, 1996, samples were collected from manholes C-10, C-9, CC1, C6, C6 inlet, C3, CA1, and C2 and Outfall 004. The samples were submitted to O'Brien & Gere Laboratories in Syracuse, New York for analysis of PCBs by USEPA Method 8080.

Outfalls 003 and 004 SPDES discharge monitoring. An ongoing discharge monitoring program is conducted on the discharges associated with Outfalls 003 and 004 under SPDES. From 1985 until the effective date of the current SPDES permit, September 25, 1997, samples were collected and analyzed by Certified Environmental Services, Inc. (CES) as follows:

- Outfall 003 was sampled on a monthly basis. A 24 hr composite sample was collected and analyzed for TSS, and total iron. A grab sample was also collected and analyzed for PCBs, VOCs, 5-day biochemical oxygen demand, pH, oil and grease, total Kjeldahl nitrogen, total recoverable phenolics, and total chlorine residual.

- Outfalls 003 and 004 were sampled on a semi-annual basis (April and October of each year) for a variety of parameters. Outfall 003 semi-annual parameters included total nitrite nitrogen, total mercury and xylene. Outfall 004 semi-annual parameters included PCBs, total magnesium, sulfate, fluoride, arsenic, manganese, zinc, nitrogen, and mercury, and VOCs.

The results of the monthly Outfall 003 sampling program were reported to the NYSDEC Division of Water in Albany and Syracuse monthly, and the results of the semi-annual sampling were reported semi-annually.

The September 1997 SPDES permit requires the following sampling and analysis of Outfalls 003 and 004, as well as Outfall 03B, the IWT plant discharge, and Outfall 04I, the point at which the storm sewers leading to Outfall 004 enter the facility property:

- Outfall 003 is sampled semi-annually for arsenic, mercury, and zinc; quarterly for 5-day biochemical oxygen demand, copper, nickel, bis(2-ethylhexyl)phthalate, di-n-octyl phthalate, and naphthalene; twice per month for oil and grease and total suspended solids; monthly for pH, aluminum, cyanide, lead, iron, total phenolics, TCE, 1,1,1-trichloroethane (1,1,1-TCA), toluene, 1,2-dichloroethene (1,2-DCE), and xylenes; and weekly for PCBs and flow.

- Outfall 004 is sampled semi-annually for arsenic and mercury; quarterly for antimony, copper, nickel, bis (2-ethylhexyl) phthalate, di-n-octyl phthalate, and naphthalene; monthly for TCE, 1,1,1-TCA, toluene, and total phenolics; and weekly for PCBs and flow.

- Outfall 03B is sampled twice per month for oil and grease and total suspended solids; monthly for pH, methylene chloride, 1,1-dichloroethane (1,1-DCA), ethylbenzene, chloroform, carbon tetrachloride; and weekly for PCBs, xylenes, toluene, TCE, and 1,1,1-TCA; and will be continuously monitored for flow.

- Outfall 04I is sampled semi-annually for arsenic and mercury; quarterly for antimony, copper, nickel, bis (2-ethylhexyl) phthalate, di-n-octyl phthalate, and naphthalene; monthly for TCE, 1,1,1-TCA, toluene, and total phenolics; and weekly for PCBs and flow.

In November 1999, GM requested modifications to the SPDES permit monitoring requirements based on monitoring frequencies and patterns of non-detections. Proposed modifications to the September 25, 1997 SPDES permit monitoring requirements were as followings:

Outfall 003

- Semi-annual monitoring of 1,1,1-TCA, toluene, trans-1,2-DCE, antimony, copper, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, and naphthalene

- No monitoring of cyanide and lead

Outfall 004

- Semi-annual monitoring of TCE, 1,1,1-TCA, toluene, antimony, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, and naphthalene

- Addition of semi-annual monitoring for tetrachloroethene (PCE)

Outfall 03B

- Monthly monitoring of 1,1,1-TCA and ethylbenzene

- No monitoring for carbon tetrachloride and 1,1,2-trichloroethane

Outfall 04I

- Semi-annual monitoring of TCE, 1,1,1-TCA, toluene, antimony, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, and naphthalene

- Addition of semi-annual monitoring of PCE

2.4. Ley Creek

Ley Creek surface water and sediment are included in the Ley Creek Deferred Media. Ley Creek surface water, sediment, and fish were sampled as part of previous investigations. Ley Creek Deferred Media are included as part of this site because NYSDEC deferred to this Order the evaluation of these media, from the RI/FS completed for the Ley Creek PCB Dredgings site. Sampling and analysis efforts conducted related to Ley Creek surface water, sediment, and fish are described in the following subsections. In order to provide the most current but complete environmental conditions for surface water and sediment, analytical data resulting from the 1996 NYSDEC sampling event and the 1998/1999 sampling events associated with the Supplemental RI are included in this report. Historical data is presented in the 1997 Preliminary RI/FS Report.

2.4. 1. Surface water sampling and analysis

1996 NYSDEC Sampling - NYSDEC collected surface water samples from two locations in the south branch of Ley Creek in 1996 for analysis for PCBs, VOCs, SVOCs, and inorganic parameters. Sample locations are described in Exhibit D and are presented on Figure 2-7.

1998/1999 O'Brien & Gere Supplemental RI sampling. Ley Creek surface water samples were collected during high and low flow conditions. Prior to sampling, the flow conditions of Ley Creek were evaluated by reviewing flow data from a United States Geological Survey (USGS) gaging station located on Ley Creek near Park Street, downgradient of the site. On November 16, 1998, the flowrate in Ley Creek at Park Street was 12.83 cubic feet per second (cfs); NYSDEC approved the condition as low flow, and low flow sampling was initiated. On October 14, 1999, the flowrate in Ley Creek was observed to be 150 cfs; NYSDEC approved the condition as high flow, and high flow sampling was initiated. The flow rate on October 15, 1999, when the high flow sampling event was completed, had decreased to 22 cfs. NYSDEC agreed that the sampling event should be completed, despite the decreased flow rate.

Surface water sampling began at the furthest downstream sample location and proceeded upstream. Surface water sampling locations are presented on Figure 2-8. Samples were collected from the approximate center of the channel at the surface of the creek. Samples were submitted to O'Brien & Gere Laboratories, Inc. and analyzed for VOCs, SVOCs, PCBs, heavy metals, and cyanide. Surface water samples GM98-SW1 and GM99-SW-1 were also submitted for complete TCL/TAL analysis.

Surface water sample locations were surveyed in November 1998. Surface water sample locations are depicted on Figure 2-8. Surface water sample locations and associated analyses are summarized in Table 2-6.

2.4.2. Sediment sampling and analysis

1996 NYSDEC Sampling - NYSDEC collected sediment samples from 26 locations in Ley Creek in 1996 for analysis for PCBs, VOCs, SVOCs, and inorganic parameters. Four sediment samples were also analyzed for TOC. Sample locations are indicated and described in Exhibit D, as well as on Figure 2-7. Sediment samples were collected in Lexan®tubes inserted to a 2 ft depth or to refusal (Benjamin 1997).

1998/1999 O'Brien & Gere Supplemental RI sampling. Ley Creek sediment probing was performed on November 17 and 18, 1998 by O'Brien & Gere and NYSDEC. Probing was performed to locate sediment depositional areas for subsequent sampling events. Probing was performed by evaluating the penetration depth of a metal or wooden rod into the sediment. The majority of the specific sample locations were selected by NYSDEC, including the locations for 6 inch to 12 inch interval samples and the sample location for expanded analyses (TCL/TAL). No sediment sample locations were selected in the main channel of Ley Creek due to a primarily hard substrate and lack of depositional areas. Sediment sample locations are described in Table 2-7.

Sediment sampling efforts were conducted in Ley Creek from November 17 through 20, 1998. Surface sediment (0 to 6 inches) samples were collected from twenty-six locations in Ley Creek selected during probing efforts. Subsurface sediment (6 to 12 inches) samples were also collected at five of the sample locations. Surveyed sample locations are shown on Figure 2-8.

Samples were collected using either dedicated polycarbonate tubing or a decontaminated shovel, pushed into the sediment until refusal. Sediment intervals were placed in separate stainless steel bowls prior to placement in laboratory jars. Samples were submitted to O'Brien & Gere Laboratories, Inc. for VOCs, SVOCs, PCBs, pesticides, heavy metals, and cyanide analyses. Twelve samples (GM98-SED1, GM98-SED7A, GM98-SED11A, GM98-SED16, GM98-SED17, GM98-SED18A, GM98-SED19, GM98-SED20A, GM98-1B, GM98-SED11B, GM98-SED18B, GM98-SED20B) were shipped to AXYS Analytical Services Ltd. for chlorinated dioxin/furan analyses. All upstream and downstream surface and subsurface sediment samples were submitted to H2M Labs, Inc. for total organic carbon analysis.

Sediment sample locations were surveyed in November 1998. Sediment sample locations are depicted on Figure 2-8. Sediment sample locations and associated analyses are summarized in Table 2-7.

2.4.3. Fish sampling and analysis

1985 EDI Ley Creek sampling program. Fourteen fish were collected from Ley Creek on June 13 and 14, 1985 from a 4000 ft length of the creek extending from 1000 ft upgradient of Outfall 003 to 3000 ft downgradient of Outfall 003. Electroshocking and seining methods were utilized to collect the fish. The fish collected included 5 bluegills, 3 shiners, 1 brown bullhead, 1 pumpkinseed, and 4 carp. Fish were submitted to RECRA Environmental Laboratories for analysis for PCBs, lipid content, and moisture content on a whole fish basis. Samples were qualitatively screened for the presence of Aroclors 1016, 1221, 1232, 1242, 1248, 1252, 1260, and 1268, and quantitative analyses were done on Aroclors detected by the qualitative screening (EDI 1985b).

1992 O'Brien & Gere Ley Creek Dredged Material Area RI. Fish were collected on July 16, 1992 from three locations in Ley Creek: approximately ½ mi upstream of Outfall 003 (immediately downstream of the confluence of the north and south branches of Ley Creek), directly downstream of Outfall 003, and approximately ½ mi downstream of Outfall 003 (in the vicinity of a NYS Thruway runoff inflow into Ley Creek). These activities were conducted to comply with NYSDEC's requirement that fish sampling and analyses be performed to verify historic data and to generate data for use in the risk assessment (Kelly 1989).

Average water depth in Ley Creek during fish sampling efforts was approximately 3.5 ft, and the average width of the creek was approximately 25 ft. The visually estimated velocity of the creek during sampling was 3 ft/sec. High turbidity, likely the result of recent heavy rains, resulted in vertical visibility of approximately 6 inches. The streambed consisted primarily of fine sand and gravel sediment over a dense clay. Very little submerged vegetation was observed. Dense stands of reed grass covered the north and south banks of Ley Creek, and the banks dropped sharply at the water's edge. A submerged delta was formed from the buildup of coarse sediment where the outfall entered the creek; water depth above the delta was approximately 1.5 to 2 ft. At the upstream sampling location, shoreline vegetation included a greater number of hardwood trees mixed with the grasses. The north branch of Ley Creek was brown in color as it merged with the south branch, which exhibited a whitish color.

Sampling locations were accessed by way of a 12-ft shallow draft aluminum boat equipped with an outboard motor. Electroshocking was performed in approximately 50 ft segments over an approximate 150 ft length of Ley Creek at each sampling location. A gill net was set up at the downstream end of the sampling area for the outfall and downstream locations. Fish were collected with dip nets as they appeared, placed in plastic bags, and stored in coolers on ice. Fish were identified to species, weighed, measured, labeled, wrapped in aluminum foil, and frozen for two weeks prior to submission to H2M Labs, Inc. for analysis.

Fish species collected from the upstream sampling location included pumpkinseed, mudminnow, stickleback, banded killifish, dace, white sucker, and golden shiner. Fish species collected from the outfall sampling location included white sucker, golden shiner, creek chub, dace, and stickleback. Carp, white sucker, pumpkinseed, banded killifish, and dace were the fish species collected from the downstream sampling location. Quantities of each species collected and associated length and mass measurements are presented in Table 2-8.

Fish were selected for analyses based on the objectives and rationale presented in the RI/FS Work Plan (O'Brien & Gere Engineers 1992a) and with the concurrence of NYSDEC personnel (Cooper 1992). Species selected for whole fish analysis included species previously collected by EDI in 1985, for comparison with previous data, and species which were collected at each of the three sampling locations, for use in the fish and wildlife impact analysis. Species selected for filet or edible portion (gutted fish with head and tail removed) analysis were edible species for use in the risk assessment. Edible portion analysis was specified for edible species which were too small to be filleted for analysis. The specific species selected for analysis at each sampling location are indicated on Table 2-8. Fish samples were submitted to H2M Laboratories, Inc. for analysis for PCBs using Method 91-3 in accordance with NYSDEC ASP (NYSDEC 1991). For fish samples with sufficient mass, percent moisture and percent lipids were also measured (O'Brien & Gere 1993).

3. Results of investigative activities

Data generated as part of the investigative efforts described in Section 2 are summarized in the following subsections. Data evaluation is also presented in this section, as well as a description of site hydrogeologic conditions.

3.1. Hydrogeologic conditions

3.1.1. Geologic setting

The site lies within the Erie-Ontario Lowlands Physiographic Province (Ontario Lowland) of New York State (Thompson 1966). The Ontario Lowland lies between Lake Ontario to the north and the Appalachian Upland Physiographic Province to the south, and is characterized by generally flat topography. The Ontario Lowland in Onondaga County consists of a lake plain covered with glaciolacustrine sediment, and drumlin fields underlain by molded lodgement till. The glaciolacustrine sediments consist of varved silt and clay and fine to medium sand. The lodgement till is generally a poorly-sorted mixture of rounded to sub-rounded cobbles and boulders embedded within a silt/clay matrix. The lake plain lies below an elevation of 450 ft above mean sea level (Winkley 1989).

Bedrock geology is characterized by the Vernon Shale that underlies much of the Ontario Lowland (Winkley 1989). The Vernon Shale is the oldest member of the Salina Group and was formed during the Upper Silurian period (approximately 400 million yrs ago). The Vernon Shale measures 500 to 600 ft thick and consists of predominantly red and green shale beds, although minor beds of dolostone, limestone, and sandstone occur locally (Mozola 1938). The Vernon shale reportedly dips southward at a rate of 40 to 50 ft per mile (Winkley, 1989).

3.1.2. Site geology

Site geology has been characterized by soil borings, trenches, and monitoring well borings. Materials encountered are consistent with the geologic setting of the site. The site unconsolidated (overburden) geology consists of fill, glaciolacustrine deposits, and lodgement till underlain by red shale bedrock. Figure 3-2 is a generalized hydrogeologic cross section that illustrates the site geology. The areal location of the cross section is depicted on Figure 2-2.

Fill at the site consists of a mixture of reworked native silt and fine sand (glaciolacustrine deposits), gravel backfill, organic matter, and anthropogenic debris (coal, wood, cinders, concrete, refuse, etc.). The fill is loose to dense and ranges in thickness from approximately 1 ft at boring OBG-13 inside the manufacturing building to greater than 16 ft at the on-site landfill area in the northwestern portion of the site.

Glaciolacustrine deposits at the site underlie the fill. These materials are predominantly soft to stiff, brown-gray silt with varying amounts of fine sand and clay. Fine layering (or varves) of the silt, fine sand and clay were clearly observed. The thickness of the glaciolacustrine deposits increase to the northeast across the site (EDI 1985a). The deposit ranges in thickness from 7 ft at well U-2D to 28 ft at well OBG-6D.

A detailed review of the boring logs indicates that in the northern portion of the site the glaciolacustrine deposits can be divided into an upper, middle and lower unit. The upper unit consists predominantly of silt and fine sand and varies in thickness from approximately 4 to 14 ft. The middle unit consists predominantly of silt and clay. The middle unit originates near the northern edge of the manufacturing building and is continuous in northern portion of the site. The middle unit varies in thickness from approximately 5 to 15 ft. The deeper portion consists of silt and fine sand. Sand and gravel lenses were noted at isolated locations at the interface between the glaciolacustrine deposits and the till. The thickness of this layer varies from 5 to 11 ft.

In the southern portion of the site, the glaciolacustrine deposits consist primarily of silt and fine sand to depths of 13 to 17 ft.

Lodgement till underlies the glaciolacustrine deposits and overlies the bedrock at the site. The till consists of a very dense to hard, red clayey silt with embedded fine to medium sub-rounded gravel. Although not fully penetrated, the till thickness was at least 45.5 ft at boring MW-11R in the northwest portion of the site. The till was reportedly fully penetrated at well W-6D, in the northwest property area where the thickness was approximately 4 ft. Although not fully penetrated, till thickness was at least 9 ft at well W-7D located in the northern portion of the facility that is consistent with findings at the adjacent Ley Creek PCB Dredgings site. Till thickness in monitoring well OBG- 3D at the adjacent Ley Creek PCB Dredgings site was 7 ft.

A contour map illustrating the top of the lodgement till is presented as Figure 3-1. The figure illustrates that the surface of the till slopes downward to the northeast toward well OBG-6D. The top of till elevation ranges from approximately 385 ft at OBG-11 in the southwest portion of the site to 346 ft at OBG- 6D located near the northeast property line. The figure illustrates that the downward slope of the till is the greatest in the vicinity of monitoring well MWI-3 and OBG-10D located in the central portion of the property. The configuration of the top of till may influence the direction of migration of contaminants.

3.1.3. Site hydrogeology

The depth to ground water at the site and the downgradient Ley Creek Dredged Material Area site varies from approximately 3 to 13 ft below ground surface in the October/November 1999 monitoring event. The saturated portions of the fill and glaciolacustrine deposit comprise the unconfined overburden aquifer. The overburden aquifer is underlain by the lodgement till unit which limits hydraulic connection between the overburden and bedrock. Based on the geology at the site the overburden aquifer was divided into a shallow and a deep zone. The classifications were developed to evaluate ground water quality in the two zones and to discuss variations in ground water flow regimes.

The upper approximate 15 ft of the saturated overburden has been designated the shallow overburden aquifer zone. This zone encompasses the entire site and contains the saturated portion of fill and the upper and middle glaciolacustrine unit.

Beginning near the northern boundary of the manufacturing building, the depth to till increases. As a result, the aquifer thickness increases, and both shallow and deep ground water zones are present. The deep overburden aquifer zone encompasses the 10 ft immediately above the lodgement till (Figure 3-1). The deep overburden aquifer zone is not present in the southwestern property area, IWT Plant area, and manufacturing building area, as the till layer was encountered at a depth of approximately between 14 and 18 ft bgs.

Ground water elevation data have been collected since 1985. Appendix F includes a summary of historic ground water elevation data measured in conjunction with well installations, wells routinely monitored in the coal pile area, former thinner tanks area, and surface impoundment area. A comparison of elevation data from numerous sampling events shows similar trends. The variations in the data are a result of seasonal fluctuations.

As part of this Supplemental RI, ground water elevations were collected on October 27, 1999 from 70 monitoring wells/piezometers. These data are presented on Table 3-1. A comparison of the ground water elevation data collected on October 27, 1999 to historical data indicate that the ground water elevations were low, but consistent with other elevation data in the fall of the year.

Shallow overburden zone. A ground water elevation map (Figure 3-3) was developed from ground water elevation data measured on October 27, 1999. The shallow ground water flow direction is generally northeast across the site toward Ley Creek under an average hydraulic gradient of 0.009 ft/ft.

Review of ground water elevation data, on the western side of the site at the former thinner tank area, indicates that flow is influenced by subsurface utilities and the recovery trench. The subsurface utilities in the former thinner tank area include a 42-inch diameter storm drain, a 24-inch diameter abandoned storm sewer, and a water line associated with fire protection. Furthermore, the ground water recovery trenches which have a combined yield of approximately 0.2 gpm may locally influence the flow direction. As a result P-9, located south of the former thinner tank area, and T-26, located north of the former thinner tank area were used to develop the site wide shallow ground water flow map.

In addition to the western area of the site, the shallow zone ground water elevation contours show apparent troughs located in the southwest property area and in the northern property boundary area. The troughs are in the vicinity where the facility storm drains are routed. The trough suggests that shallow ground water flow direction locally converges due to the storm drain effects on the shallow aquifer zone.

Horizontal hydraulic conductivity values in the shallow overburden aquifer zone, presented in Table 3-2, range from 7.51×10^{-3} ft/day to 1.76 ft/day.

The ground water velocity in the shallow ground water has been calculated using the range of hydraulic conductivity values, the hydraulic gradient and assumed porosity as follows:

Ground water velocity $V = KI/n$

where:

V= Velocity (ft/day)
K=Hydraulic Conductivity = (7.51×10^{-3} to 1.76 ft/day)
I= Hydraulic gradient = 0.009 ft/ft.
n= porosity = 0. 35 assumed (Fetter, 1980)

V= 1.9×10^{-4} ft/day to 4.5×10^{-2} ft/day (0.07 to 16.4 ft/year).

An approximation of ground water discharge at the site boundary is presented based on the existing hydrogeologic data. Assuming the horizontal extent of the downgradient property boundary is 2000 ft, and an average saturated thickness of the shallow glaciolacustrine unit is 15 ft, the shallow ground water discharge at the property boundary has been calculated as follows:

Ground water discharge rate Q = KIA

where:
Q = Discharge (ft^3/day)
K = Horizontal Hydraulic Conductivity 7.51×10^{-3} to 1.76 ft/day
I= Hydraulic Gradient (10/27/99) = 0.009 ft/ft
A = cross sectional area (2000 ft (horizontal distance)
multiplied by 15 (saturated thickness)

Q = 2.0 to 475 ft^3/day (15 to 3553 gal/day).

Vertical flow potential between the shallow and deep ground water zones is generally downward. Vertical gradients range from 0.01 ft/ft to 0.18 ft/ft with no apparent pattern in the variations. Well nests OBG-9S/9D and OBG-3S/3D exhibited upward flow potentials. The deep well in both of these nested pairs is either partially or fully screened in the glacial till. The lower hydraulic conductivity of the glacial till is likely responsible for this variation in the observed ground water elevations.

Tri-axial permeability tests were completed of the glaciolacustrine unit to assess the vertical permeability of this deposit. The vertical permeability of the upper and glaciolacustrine unit ranged from 2.4×10^{-4} to 3.9×10^{-4} ft/day (EDI 1985a). This is approximately 1 to 3 orders of magnitude less than the horizontal hydraulic conductivity. This trend is consistent with the varved and fine grained nature of the glaciolacustrine deposits and suggests that horizontal ground water flow is the preferential flow path.

Deep overburden zone. A ground water elevation map (Figure 3-4) was developed from ground water elevation data measured on October 27, 1999. As previously discussed, the deep overburden zone is not present in the southern portion of the property due to the limited saturated thickness as a result of the shallow depth to the till. Similar to the shallow zone, the deep ground water flow direction is generally to the north toward Ley Creek under an average hydraulic gradient of 0.01 ft/ft.

Horizontal hydraulic conductivity values in the deep overburden aquifer zone, presented in Table 3-2, range from 4.25×10^{-2} ft/day to 3.12 ft/day (O'Brien & Gere 1989a, EDI 1985a).

The ground water velocity in the deep ground water has been calculated using the range of hydraulic conductivity values, hydraulic gradient and porosity as follows:

Ground water velocity V= KI/n
where:

V= Velocity (ft/day)
K=Hydraulic Conductivity (4.25 x 10-2 to 3.12 ft/day)1
I= Hydraulic gradient = 0.01 ft/ft.
n= porosity = 0.35 assumed (Fetter, 1980)

V= 1.21×10^{-3} ft/day to' 8.9×10^{-2} ft/day (0.44 ft/year to 32.5 ft/year)

An approximation of ground water discharge at the site boundary is presented based on the existing hydrogeologic data. Assuming the horizontal extent of the downgradient property boundary is 2000 ft, and an average saturated thickness of the deeper ground water zone is 10 ft, the ground water discharge at the property boundary has been calculated as follows:

Ground water discharge rate Q = KIA

where:

Q = discharge (ft^3/day)
K = Horizontal Hydraulic Conductivity = 4.25×10^{-2} to 3.12 ft/day
I= Hydraulic Gradient (10/27/99) = 0.009 ft/ft
A = cross sectional area (2000 ft (horizontal distance)

multiplied by 10 (saturated thickness)

Q = 8.5 to 624 ft^3/day (64 to 4667 gal/day).

Lodgement till. Lodgement till vertical permeability was evaluated by laboratory tri-axial testing of three samples. Vertical permeability values presented in Table 3-2 ranged from 1.42 x 10^{-4} ft/day to 7.09 x 10^{-5} ft/day (EDI 1985a). The results are less than the vertical permeabilities of the glaciolacustrine deposits.

At the Ley Creek PCB Dredgings site, monitoring wells OBG-3D and MW-9D were installed atop bedrock within the lodgement till. The wells were sealed from the overlying glaciolacustrine unit. Historical data indicate these wells exhibited an upward flow potential with the hydraulic head in OBG-3D approximately 5 ft higher than in the adjacent shallow monitoring well OBG-3. Well MW-9D exhibited artesian conditions with water flowing from the top of the well casing. These conditions further corroborate the assessment that the lodgement till layer observed at the Ley Creek PCB Dredgings site behaves as an aquitard.

3.2. Soil

Data generated during soil investigative efforts described in Section 2 are summarized in this section. Soil data are described with respect to the following areas at the facility: manufacturing building subsurface, southeast property area, IWT plant area, former thinner tanks area, northeast property area, the northern property area, and southwest property area. Comprehensive summaries of soil data for detected constituents are presented in Tables 3-5 (PCBs), 3-6 (oil & grease and detected petroleum hydrocarbons), 3-7 (inorganics), 3-8 (VOCs), 3-9 (SVOCs), 3-10 (dioxin/furans), 3-11 (dioxin/furan toxicity equivalent quotient), and on figures included in Appendix C. NYS soil cleanup objectives presented in NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4046, *Determination of Soil Cleanup Objectives and Cleanup Levels* (NYSDEC 1995), were used as screening values for comparison to soil concentrations, and are also included on Tables 3-5 through 3-9. A summary of constituents detected above screening levels, as well as soil sample locations, for each of the areas of the facility is provided in Table 3-4. Historic analytical data are included in Exhibit E of the 1997 Preliminary RI/FS Report. Additionally, the Analytical Data Assessment and Validation

Report for CRA data is presented in Exhibit F of the 1997 Preliminary RI/FS Report.

3.2.1. Background soils

During the 1998/1999 Supplemental RI, soil boring OBG-TB-33 was installed for the purpose of collecting background data. Methylene chloride (1 N mg/kg), bis(2-ethylhexyl)phthalate (59 J mg/kg) and PCB Aroclor 1242 (0.04 J mg/kg) was detected in this sample. Site related metals including arsenic (2.4 mg/kg), chromium (13.7 J mg/kg), copper (11.8 mg/kg), lead (4.9 mg/kg), nickel (11.5 mg/kg), and zinc (28.4 mg/kg), were detected in this location. The detected zinc concentration was greater than the NYSDEC TAGM 4046 screening level. Cyanide was not detected in this location.

3.2.2. Manufacturing building subsurface

Soil beneath and in the vicinity of the manufacturing building was evaluated by CRA during the 1995 Phase II ESA and by O'Brien & Gere during the 1998/1999 Supplemental RI, as discussed in Section 2. These evaluations consisted of the installation of a series of soil borings beneath the building floor, summarized by area as follows:

Abandoned underground oil sumps and tanks. During the August 1995 investigation described in Section 2, fourteen soil borings (BH-11, BH-12, BH-13, BH-14, BH-15, BH-16, BH-17, BH-18, BH-19, BH-20, BH-21, BH-22, BH-23, and BH-24) were installed adjacent to the abandoned oil collection sumps (hydraulic oil sumps A, C, D, E, F, G, H, I, J, and K) and tanks (hydraulic oil underground tanks N, O, P, Q, and R). Hydraulic oil sump and tank depths are presented in Attachment 1 of Appendix G. Soil borings were installed within 3 ft of the sump or tank in an attempt to examine soil conditions within the bedding material areas around the sumps. Borings were installed to the approximate depth of the bottom of the sump or tank, and one soil sample was collected from each boring from near the base of the bedding material. Detectable concentrations of PCBs, ranging from 0.061 to 47 mg/kg, were found at thirteen of fourteen locations. The samples were also analyzed for a petroleum hydrocarbon scan, and SAE 30w oil was detected at concentrations ranging from 280 to 80,000 mg/kg.

During the April 1996 CRA investigation, fifteen additional soil borings (BH-25, BH-26, BH-27, BH-28, BH-29, BH-30, BH-39, BH-40, BH-41, BH-42, BH-43, BH-45, BH-49, BH-50, and BH-51) were installed adjacent to sumps (hydraulic oil sumps B and L) not investigated during the earlier phase and adjacent to certain sumps (hydraulic oil sumps H, I, K, M) with August 1995 PCB detections above the NYSDEC TAGM 4046 soil screening level. PCB Aroclor 1248 was detected in fourteen of fifteen locations, at concentrations ranging from 0.061 to 25 mg/kg. SAE 30w oil was detected in the samples collected from thirteen of the fifteen borings, at concentrations ranging from 280 to 48,000 mg/kg.

Data collected to date in this area show that PCBs were detected at concentrations greater than the NYSDEC TAGM 4046 screening levels in samples BH-11, BH-13, BH-15, BH-20, BH-35 and BH-41, installed in the vicinity of hydraulic oil sumps H, I, J and K, and the former hydraulic oil tank O (removed). PCBs were generally present in samples from these locations between 7 and 13.5 ft below surface. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-5A, B, and C.

Former electroplating sumps. During the August 1995 investigation, six soil borings (BH-4, BH-5, BH-6, BH-7, BH-9, and BH-10) were installed adjacent to the suspected locations of former electroplating sumps. Chromium (10 to 120 mg/kg), copper (8 to 43 mg/kg), and nickel (8.3 to 4000 mg/kg) were detected in each of the samples. Cyanide was detected in samples from borings BH-4 (3.1 mg/kg) and BH-7 (11 mg/kg). VOCs were detected in three of the borings in the vicinity of the paint room, as discussed below.

During the April 1996 investigation, two additional soil borings (BH-46 and BH-47) were installed east and west of former sump #3. Samples obtained from these borings were analyzed for RCRA metals and nickel, with the results indicating detectable concentrations of arsenic (2.9 and 4.9 mg/kg), barium (64.2 and 69.0 mg/kg), cadmium (0.28 and 0.29 mg/kg), chromium (15.2 and 18.1 mg/kg), lead (7.7 and 8.1 mg/kg), nickel (16.8 and 19.9 mg/kg) and selenium (0.49 and 0.56 mg/kg).

As discussed below, during the 1998/1999 Supplemental RI, four soil borings (OBG-TB-12, OBG-TB-13, OBG-TB-16 and OBG-TB-17) were installed in the vicinity of the paint room. These locations are also in the vicinity of the former electroplating sumps. Detected concentrations of site-related metals included arsenic (2.5 mg/kg to 5.8 mg/kg), chromium (10.2 J mg/kg to 74.5 mg/kg), copper (14.6 mg/kg to 689 mg/kg), lead (3.6 mg/kg to 8.9 mg/kg), nickel (13.7 mg/kg to 145 mg/kg), and zinc (25 mg/kg to 52.2 mg/kg). In addition to site-related metals, samples were analyzed for cyanide, which was detected at concentrations ranging from 2.2 J mg/kg to 614 J mg/kg. Detected concentrations are depicted in Appendix C.

Data collected to date in this area show that concentrations of the site-related metal copper (in BH-4, BH-7, BH-9, OBG-TB-13, OBG-TB-16 and OBG-TB-17, down to a depth of 17 ft) were detected above the NYSDEC TAGM 4046 screening level of 25 mg/kg. These detections were in the vicinity of chrome sumps 4 and 5, acid-alkali sump 7, and the paint room. Chromium was detected in samples BH-7 and OBG-TB-16 in the vicinity of cyanide sump 2 and chrome sump 5, at concentrations greater than the NYSDEC TAGM 4046 screening levels, down to a depth of 17 ft. Nickel was detected at concentrations greater than the NYSDEC TAGM 4046 screening levels in samples from all locations in this area, to a depth of 17 ft below surface. Zinc was detected above the NYSDEC TAGM 4046 screening levels in samples from OBG-TB-12, OBG-TB-13, OBG-16, and OBG-TB-17, collected from the vicinity of chrome sumps 5, acid-alkali sump 7 and the paint room, to a depth of 17 ft below surface. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-5A, B, and C.

Former PCB oil USTs. One soil boring (HA-6) was installed at the suspected location of a former PCB oil UST located beneath the manufacturing building floor. A soil sample was collected below the approximate depth of the UST, 5 ft bgs. This soil sample yielded a PCB concentration of 0.41 mg/kg, which is below the screening level for PCBs. Boring HA-5 was installed at the suspected location of another former PCB oil UST outside the manufacturing building on the east side. PCBs were not detected in this sample. Petroleum hydrocarbons were not detected in either sample. Detected concentrations are depicted in Appendix C.

Paint room area. Three soil borings (BH-6, BH-7, and BH-9) were installed in the vicinity of the paint room during the April 1996 investigations in order to further evaluate VOCs which were detected in soil samples obtained during the August 1995 investigation. During the August 1995 investigation, VOCs were detected in samples from BH-6, BH-7 and BH-9 in the following ranges: TCE (0.28 to 73 mg/kg) and toluene (less than detectable to 0.21 mg/kg). VOCs detected in the three additional borings installed in April 1996 (BH-46, BH-47 and BH-48) included acetone (0.014 to 0.021 mg/kg), TCE (6 to 150 mg/kg) and 1,2-DCE (0.14 to 1 mg/kg). Elevated PID readings were noted during installation of these borings, which is consistent with the detection of VOCs in the samples.

During the 1998/1999 Supplemental RI, four soil borings (OBG-TB-12, OBG-TB-13, OBG-TB-16 and OBG-TB-17) were installed in the vicinity of the paint room. PCB Aroclor 1248 was detected in one of the four soil sample locations (OBG-TB-17) at 0.002 J mg/kg. VOCs were detected in each of the soil borings. Detected VOCs, at the following concentration ranges, included: cis-1,2-DCE (0.017 mg/kg to 4.1 mg/kg), trans-1,2-DCE (0.065 J mg/kg to 0.087 mg/kg), and TCE (0.032 mg/kg to 22 mg/kg). SVOCs were not detected in any of these samples. Site-related metals were detected in each of the soil borings, at the following concentrations: arsenic (2.5 mg/kg to 6.5 mg/kg), chromium (10.2 J mg/kg to 74.5 J mg/kg), copper (14.6 mg/kg to 689 mg/kg), lead (3.6 mg/kg to 8.9 mg/kg), nickel (13.7 mg/kg to 145 mg/kg), and zinc (25 mg/kg to 52.2 mg/kg). Detected concentrations are depicted in Appendix C.

Data collected to date show detections of TCE in subsurface soil in the vicinity of the paint room at concentrations above NYSDEC TAGM 4046 screening levels in eight of the ten locations sampled to date (BH-7, BH-9, BH-46, BH-47, BH-48, OBG-TB-12, OBG-TB-13, and OBG-TB-16) at concentrations ranging from 0.032 mg/kg to 150 mg/kg, down to a depth of 16 ft. In addition, cis-1,2-DEC was detected above the NYSDEC TAGM 4046 screening level in four of the ten locations sampled to date (BH-47, BH-48, OBG-TB-12, and OBG-TB-17) at concentrations ranging from 2.8 mg/kg to 42 mg/kg, down to a depth of 16 ft. Methylene chloride was detected above the NYSDEC TAGM 4046 screening level in one location (OBG-TB-17). Site-related metals nickel and zinc were detected above the NYSDEC TAGM 4046 screening levels in each of the samples collected in 1999, down to a depth of 17 ft. The site-related metal copper was detected above the NYSDEC TAGM 4046 screening level in three of the four soil borings collected in 1999, down to a depth of 17 ft. As discussed above in relation to the former electroplating sumps, chromium, nickel, and copper were also detected in 1996 at concentrations greater than the corresponding NYSDEC TAGM 4046 screening levels. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-5A, B, and C.

Abandoned storm sewer trenches. Evaluation of the soil adjacent to the abandoned storm sewer trenches beneath the facility floor involved the installation of twelve soil borings (BH-31, BH-32, BH-33, BH-34, BH-35, BH-36, BH-37, BH-38, BH-51, BH-52, BH-53, and BH-54) installed by CRA in 1996 along the line leading to oil/water collection sump 5. The soil sample data indicated the presence of PCBs (0.036 to 4300 mg/kg) in nine of the samples and SAE 30w oil (320 to 55,000 mg/kg) in eight of the samples.

During the 1998/1999 Supplemental RI, six soil borings (OBG-TB-1, OBG-TB-4, OBG-TB-5, OBG-TB-14, OBG-15, and OBG-TB-19) were installed adjacent to oil/water collection sumps 2, 3, 6, 7 and 8 and along the fire protection line. The borings were installed to between 11 and 13 ft below grade. As described in Section 2.1, samples from OBG-TB-4 were screened for NAPL, but not submitted for laboratory analysis. PCB Aroclor 1248 was detected in samples collected at each depth interval in these soil borings at concentrations ranging from 0.003 J to 140 mg/kg. Chlorinated VOCs, mainly TCE and cis-1,2-DCE, were detected in the samples in the vicinity of oil/water collection sumps 3, 6, and 7. Methylene chloride was tentatively identified in samples collected from the vicinity of oil/water collection sumps 3, 6, 7, and 8 and chloroform was tentatively identified in the vicinity of oil/water collection sump 3. Xylene was tentatively detected in one sample in the vicinity of oil/water collection sump 7, and was detected in the vicinity of oil/water collection sump 8. Ethylbenzene was detected twice in samples in the vicinity of oil/water collection sumps 7 and 8. Detected VOCs, and the respective range of detections, included: chloroform (0.041 NJ mg/kg), cis-1,2-DCE (0.001 mg/kg to 0.027 mg/kg), ethylbenzene (0.009 mg/kg to 0.053 N mg/kg), methylene chloride (0.002 N mg/kg to 0.025 N mg/kg), PCE (0.001 mg/kg), TCE (0.003 mg/kg to 3.3 mg/kg), and xylene (0.068 mg/kg to 0.26 N mg/kg).

Several SVOCs were detected during the 1998/1999 Supplemental RI in samples collected from the vicinity of oil/water collection sumps 2, 3, and 8. Butyl benzyl phthalate was the only SVOC detected in samples collected from the vicinity of oil/water collection sump 7. Detected SVOCs and their respective concentrations ranges included: benzo(a)anthracene (0.036 J mg/kg to 0.084 J mg/kg), benzo(a)pyrene (0.035 J mg/kg to 0.078 J mg/kg), benzo(b)fluoranthene (0.047 J mg/kg to 0.11 J mg/kg), benzo(g,h,i)perylene (0.039 J mg/kg), butyl benzyl phthalate (0.048 J mg/kg), chrysene (0.046 J mg/kg to 0.1 J mg/kg), fluoranthene (0.038 J mg/kg to 0.19 J mg/kg), phenanthrene (0.037 J mg/kg to 0.16 J mg/kg), and pyrene (0.04 J mg/kg to 0.25 J mg/kg).

Site-related metals detected during the 1998/1999 Supplemental RI include arsenic (1.6 mg/kg to 7.2 mg/kg), chromium (7.1 mg/kg to 34.6 mg/kg), copper (4.8 mg/kg to 30.7 mg/kg), lead (3 mg/kg to 32.5 mg/kg), nickel (5.9 J mg/kg to 34.1 mg/kg), and zinc (11.2 mg/kg to 67 mg/kg). Detected concentrations are depicted in Appendix C.

During the 1998/1999 Supplemental RI, the eight soil borings (OBG-TB-2, OBG-TB-3, OBG-TB-6, OBG-TB-7, OBG-TB-8, OBG-PZ-4, OBG-PZ-5, and OBG-PZ-6) were installed the along abandoned lines leading to oil/water collection sumps 1 and 5 were also used to assess the presence of NAPL. The results of the NAPL screening are included in Table 3-3. Soil borings installed along abandoned lines leading to oil/water collection sump 1 (OBG-TB-2 and OBG-TB-3) showed no presence of NAPL. Field screening of soil from three of the soil borings installed along abandoned line leading to oil/water collection sump 5 (OBG-PZ-4, OBG-PZ-5, and OBG-PZ-6) showed ultraviolet fluorescence, indicating the presence of residual NAPL. The PID readings ranged from 0.6 to 220 ppm, as indicated in Table 3-3. In accordance with the Final Supplemental RI/FS Work Plan, these borings were completed as piezometers. An oil/water interface probe was used to evaluate the presence of NAPL. No accumulated NAPL was measured. The remaining three soil borings installed along the abandoned line leading to oil/water collection sump 5 (OBG-TB-6, OBG-TB-7, and OBG-TB-8) showed no presence of NAPL.

To date, concentrations of PCBs above the screening criteria were detected in four of the borings (BH-34, BH-35, BH-37, and OBG-TB-19) along the abandoned lines leading to oil/water collection sumps 5 and 7, at concentrations ranging from 32 mg/kg to 4,300 mg/kg as deep as the 10 to 12-ft sampling interval. TCE was the only VOC detected above the NYSDEC TAGM 4046 screening level, near oil/water collection sump 3 (OBG-TB-14). Benzo(a)pyrene was the only SVOC detection greater than the NYSDEC TAGM 4046 screening levels, near oil/water collection sump 8 (OBG-TB-01). Site-related metals nickel and zinc were present at concentrations greater than the NYSDEC TAGM 4046 screening levels in samples collected from the vicinity of oil/water collection sumps 2, 3, 6, 7, and 8 (OBG-TB-15, OBG-TB-14, OBG-TB-5, OBG-TB-19, and OBG-TB-1, respectively). Copper, also a site-related metal, was only detected in the vicinity of oil/water collection sumps 7 and 8 at concentrations greater than the NYSDEC TAGM 4046 screening level. Detected concentrations are depicted in Appendix C. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-5A, B, and C.

Loading dock leveler sumps. Two soil borings (HA-3 and HA-4) were installed in the vicinity of the former dock leveler sumps by CRA in August 1995, and one sample from each location was collected and submitted for petroleum hydrocarbon scan (PHS) and PCB analyses. Petroleum hydrocarbons were not detected in either sample, and PCBs were not detected in the soil sample from soil boring HA-3. PCBs were detected at a concentration (0.390 mg/kg) below the NYSDEC TAGM 4046 screening level at the HA-4 location. Detected concentrations are depicted in Appendix C.

Compactor area. One soil boring (HA-1) was installed in the former compactor area by CRA in August 1995, and one soil sample was collected and submitted for analyses of PHS, PCBs, and VOCs. Only toluene and xylene were detected at concentrations of 720 and 1.9 mg/kg, respectively, which are above the NYSDEC TAGM 4046 screening levels (1.5 and 1.2

mg/kg, respectively). Detected concentrations are depicted in Appendix C. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-5A, B, and C.

Summary. The sampling activities and associated results from various investigations conducted in the manufacturing building to date indicate that soil in certain locations beneath the manufacturing building contains PCBs, VOCs, SVOCs and site-related metals. PCB concentrations above the screening levels generally ranged from 13 to 47 mg/kg, with the exception of three samples, OBG-TB-19, BH-35, and BH-37. Sample OBG-TB-19, located in the vicinity of sump 7 (near the paint storage room), contained PCBs at 140 mg/kg. Samples BH-35 and BH-37 contained 2700 mg/kg and 4300 mg/kg, respectively. The results in samples BH-53, BH-54, BH-38, and HA-6 show that the PCB concentration in BH-37 is localized. Similarly, results in samples BH-18, BH-32 and BH-36 indicate that the PCB concentration in BH-35 is also localized. NAPL field screening was positive in three sample locations along the abandoned line leading to oil/water collection sump 5; however, no NAPL was measured using oil/water interface probes in piezometers completed at these locations.

TCE detections above screening levels generally ranged from 0.73 to 14 mg/kg, with the exception of three samples, BH-46, BH-9 and BH-47. At these locations, TCE was detected at concentrations ranging from 47 to 150 mg/kg. These higher concentrations were located between the paint room and the abandoned line leading to oil/water collection sump 6, located south of the paint room. SVOC detections above screening levels were limited to benzo(a)pyrene and phenol in soil beneath the manufacturing building in the vicinity of oil/water collection sump 8.

Chromium, nickel, copper, and zinc were detected at concentrations above the screening levels in soil beneath the manufacturing building at locations adjacent to former electroplating sumps. Copper, nickel, and zinc were detected at concentrations above the screening levels in the vicinity of the former oil/water collection sumps.

The specific locations where constituents were detected at concentrations above the respective NYSDEC TAGM 4046 screening levels are summarized in Table 3-4 and as follows:

<u>PCBs</u>

- abandoned hydraulic oil sumps H, I, J, K and the former hydraulic oil tank O
- paint room (one of ten samples from the center of paint room)

- abandoned line leading to oil/water collection sump 5
- oil/water collection sump 7.

<u>VOCs</u>
- oil/water collection sump 3 (TCE only)
- paint room (TCE and cis-1,2-DCE)
- former compactor area (toluene and xylene)

<u>SVOCs</u>
- oil/water collection sump 8 (benzo(a)pyrene and phenol).

<u>Metals</u>
- former electroplating sumps (chromium, copper, nickel and zinc)
- oil/water collection sumps (copper, nickel, zinc).

3.2.3. Southeast property area

Soil in the general storage area in the southeast property area was evaluated by CRA in the 1995 Phase II ESA. Two soil borings (HA-7 and HA-8) were installed by CRA within the general storage area in August 1995, and one sample from each boring was collected and submitted for analyses of VOCs, SVOCs, PCBs, and RCRA metals. Arsenic, chromium, and lead were detected in each soil sample. Additionally, toluene and selenium were detected in the soil sample from soil boring HA-8.

O'Brien & Gere collected one soil sample from a boring (S-13) installed at a proposed telephone pole location in the southeast property area in 1996. The sample, a 0 to 5 ft composite, was analyzed for PCBs, which were not detected (O'Brien & Gere 1996a).

During the 1998/1999 Supplemental RI, two soil borings (OBG-TB-22 and OBG-TB-23) were collected to investigate beneath the parking lot. Methylene chloride was the only VOC detected in the soil borings in this area, at concentrations ranging from 0.003 N mg/kg to 0.006 N mg/kg. SVOCs anthracene (0.047 J mg/kg), benzo(a)anthracene (0.14 J mg/kg), benzo(a)pyrene (0.13 J mg/kg), benzo(b)fluoranthene (0.26 J mg/kg), benzo(k)fluoranthene (0.066 J mg/kg), chrysene (0.22 J mg/kg), fluoranthene (0.37 J mg/kg), phenanthrene (0.37 J mg/kg), pyrene (0.71 J mg/kg), and bis(2-ethylhexyl)phthalate (1.3 J mg/kg) were detected in OBG-TB-22. Bis(2-ethylhexyl)phthalate (0.5 mg/kg to 1.3 J mg/kg) was detected in OBG-TB-22 and OBG-TB-23. PCB Aroclor 1248 was detected at 0.005 J mg/kg in OBG-TB-23. PCBs were not detected in OBG-TB-22. Site-related metals arsenic (3.3 mg/kg and 5.6 mg/kg), chromium (14 mg/kg and 27.9 mg/kg), copper (13.4 mg/kg and 23.8 mg/kg), lead (5.3 mg/kg and 9.2

mg/kg), nickel (13.9 mg/kg and 26.9 mg/kg), and zinc (31.9 mg/kg and 53.1 mg/kg) were also detected in these two samples.

In addition, during the 1998/1999 Supplemental RI, four surface soil samples (SS-99-18, SS-99-19, SS-99-20 and SS-99-21)were collected to investigate the vicinity of the former miscellaneous storage area. Methylene chloride was the only VOC detected in these surface soil samples, at concentrations ranging from 0.003 mg/kg to 0.006 mg/kg. Several SVOCs were detected in these surface soil samples, including 2-methylnaphthalene (0.057 J mg/kg to 0.12 J mg/kg), anthracene (0.064 J mg/kg), benzo(a)anthracene (0.1 mg/kg to 0.27 mg/kg), benzo(a)pyrene (0.11 J mg/kg to 0.37 mg/kg), benzo(b)fluoranthene (0.043 mg/kg to 0.72 mg/kg), benzo(g,h,i)perylene (0.45 J mg/kg), benzo(k)fluoranthene (0.057 J to 0.23 mg/kg), butyl benzyl phthalate (0.22 J mg/kg), chrysene (0.16 J mg/kg to 0.52 mg/kg), di-n-butyl phthalate (0.089 J mg/kg), fluoranthene (0.046 J mg/kg to 0.33 J mg/kg), indeno(1,2,3-c,d)perylene (0.35 J mg/kg), naphthalene (0.078 J mg/kg to 0.09 J mg/kg), phenanthrene (0.13 J mg/kg to 0.28 J mg/kg), pyrene (0.041 J mg/kg to 0.87 J mg/kg), and bis(2-ethylhexyl)phthalate (0.072 J mg/kg to 1 J mg/kg). PCBs were detected at concentrations ranging from 0.3 mg/kg to 8 J mg/kg in three of these surface samples. Site-related metals detected in these surface soils samples included arsenic (4.9 mg/kg and 162 mg/kg), chromium (21.5 mg/kg to 31.4 mg/kg), copper (19.8 mg/kg to 60.3 mg/kg), lead (10.8 mg/kg and 50.8 mg/kg), nickel (20.3 mg/kg and 54 mg/kg), and zinc (53.1 mg/kg and 892 mg/kg). In addition to site-related metals, sample SS-99-21 was analyzed for TAL metals. TAL metals (in addition to site-related metals) detected in this sample included: aluminum, antimony, barium, beryllium, cadmium, calcium, cobalt, iron, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, and vanadium. Detected concentrations are depicted in Appendix C.

Data collected to date in this area show that constituents in subsurface soils beneath the parking lot at concentrations that exceeded the NYSDEC TAGM 4046 screening level included benzo(a)pyrene, benzo(b)fluoranthene, nickel and zinc. Constituents in surface soils in the vicinity of the former miscellaneous storage area at concentrations that exceeded the NYSDEC TAGM 4046 screening level included PCB Aroclor 1254 (8 J mg/kg, in sample SS-99-18); SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene; site-related metals arsenic, copper, nickel and zinc; and metals beryllium and iron. The only constituent detected at concentrations greater than the NYSDEC TAGM 4046 screening level in subsurface samples in the vicinity of the former miscellaneous storage area was chromium. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-6A, B, and C.

Summary. The sampling activities and associated results from the various investigations conducted in the southeast property area indicate that soil in certain locations in this area contains PCBs, SVOCs, and site-related metals. PCBs were detected in one of six surface soil samples collected from the northern side of the general storage area at a concentration of 8 J mg/kg. SVOCs detected above the screening levels were limited to three surface soil location in the in the vicinity of the general storage area, and one subsurface soil location beneath the parking lot. Arsenic, copper, nickel, zinc, beryllium and iron were detected above screening levels in surface soil in the vicinity of the general storage area located in the southeast property area. Zinc was the only metal detected at concentrations above the screening level in subsurface soil beneath the parking lot in the southeast property area. Specific locations where constituents were detected at concentrations above the respective NYSDEC TAGM 4046 screening levels are summarized in Table 3-4, and listed as follows:

<u>PCBs</u>
- general storage area

<u>SVOCs</u>
- general storage area
- parking lot

<u>Metals</u>
- general storage area
- parking lot

3.2.4. Industrial waste treatment plant area

Soil in the vicinity of the IWT plant was evaluated by EDI, CRA, and O'Brien & Gere, as described in Section 2. This evaluation included the installation and sampling of seventeen soil borings and ten surface soil samples, summarized by area as follows:

General IWT plant area. EDI sampled one boring (P-13) during the 1985 Hydrogeological Investigation and six borings (WT-10 to WT-15) during the 1985 Phase II Hydrogeological Investigation in the vicinity of the IWT plant. PCBs Aroclors 1242 and 1248 were each detected in one sample at concentrations of 1.8 mg/kg (WT-13) and 0.14 mg/kg (P-13), respectively.

Oil & grease were detected in each of sixteen samples analyzed from borings WT-10 to WT-15 at concentrations ranging from 80 mg/kg to 440 mg/kg. Oil and grease concentrations with respect to depth are depicted in Exhibit G of the 1997 Preliminary RI/FS Report (EDI 1985a, 1986a).

O'Brien & Gere collected soil samples from two borings (S-11 and S-12) installed at proposed telephone pole locations in the vicinity of the IWT plant in 1996. These two samples (0 to 5 ft composites) were analyzed for PCBs. PCB Aroclor 1254 was detected in S-11 and S-12 at 0.032 mg/kg and 0.027 mg/kg, respectively, less than the NYSDEC TAGM 4046 screening level (O'Brien & Gere 1996a).

During the 1998/1999 Supplemental RI, five surface soil samples (SS-99-22, SS-99-23, SS-99-28, SS-99-29, and SS-99-30), were collected to evaluate surface soil in the vicinity of the IWT plant. Methylene chloride (0.003 N mg/kg to 0.035 NJ mg/kg) was detected in each of the samples, and toluene (0.001 J mg/kg) was detected in one of these samples (SS-99-28). Several SVOCs were also detected in each of these samples. Detected SVOCs included methyl naphthalene (0.059 J mg/kg to 0.21 J mg/kg), acenaphthene (0.046 J to 0.33 J mg/kg), anthracene (0.052 J mg/kg to 2.5 J mg/kg), benzo(a)anthracene (0.092 J mg/kg to 7.6 mg/kg), benzo(a)pyrene (0.19 J mg/kg to 8.4 mg/kg), benzo(b)fluoranthene (0.31 J mg/kg to 12 J mg/kg), benzo(g,h,i)perylene (0.11 J mg/kg to 3.2 J mg/kg), benzo(k)fluoranthene (0.091 J to 3.8 J mg/kg), butyl benzyl phthalate (0.54 J mg/kg to 36 mg/kg), carbazole (0.21 J mg/kg to 1.3 J mg/kg), chrysene (0.15 J mg/kg to 8.5 mg/kg), dibenzo(a,h)anthracene (0.14 J mg/kg), dibenzofuran (0.039 mg/kg to 0.11 J mg/kg), dimethyl phthalate (0.086 J mg/kg), fluoranthene (0.092 J mg/kg to 13 J mg/kg), fluorene (0.18 J mg/kg to 1 J mg/kg), indeno(1,2,3-c,d)perylene (0.1 J mg/kg to 3.5 J mg/kg), naphthalene (0.24 J mg/kg), phenanthrene (0.084 J mg/kg to 9 mg/kg), phenol (0.041 J mg/kg), pyrene (0.23 J mg/kg to 14 mg/kg), and bis(2-ethylhexyl)phthalate (0.062 J mg/kg to 0.51 J mg/kg). PCB Aroclor 1248 was detected in four of these five surface soil samples at concentrations ranging from 0.8 mg/kg to 11 J mg/kg. PCB Aroclor 1254 was detected in SS-99-29 at 0.8 mg/kg. Site-related metals arsenic (4.6 mg/kg to 6 mg/kg), chromium (15.2 mg/kg to 39 mg/kg), copper (14.7 mg/kg to 21.5 mg/kg), lead (7.9 mg/kg to 33.2 mg/kg), nickel (14.9 mg/kg to 26.8 mg/kg), and zinc (50.8 mg/kg to 137 mg/kg) were also detected in these samples. Detected concentrations are depicted in Appendix C.

Results from the various investigations conducted in this area show that constituents detected at concentrations greater than the NYSDEC TAGM 4046 screening levels included SVOCs and PCBs. PCBs were detected above the NYSDEC TAGM 4046 screening level of 1 mg/kg for surface soil in three of the surface soil samples at concentrations ranging from 7 mg/kg to 11 mg/kg. These locations are in the vicinity of the clarifiers (SS-99-30) and the former chromium water conditioning tanks (SS-99-22 and SS-99-23). SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-c,d)perylene, and phenol were detected above the NYSDEC TAGM 4046 screening level in surface soil in this area. Metals detected at concentrations greater than the NYSDEC TAGM 4046 screening level included nickel and zinc. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-7A, B, and C.

Electroplating wastewater treatment tanks. Two borings (HA-9 and HA-10) were advanced in the vicinity of the electroplating wastewater treatment tanks by CRA in August 1995, and one soil sample from each location was collected and submitted for analysis of chromium, cadmium, copper, nickel, and cyanide. Chromium, copper, and nickel were detected in both samples at concentrations (6.9 J, 13 J, and 9.6 J mg/kg, respectively, in HA-9, and 3.1 J, 10 J, and 5 J mg/kg, respectively, in HA-10) below NYSDEC TAGM 4046 screening levels. Detected concentrations are depicted in Appendix C.

Former liquid waste incinerator area. One soil boring (HA-12) was advanced by CRA in August 1995 in the former liquid waste incinerator area, and one soil sample was collected and submitted for analysis for VOCs, SVOCs, PCBs, RCRA metals, and cyanide. The soil sample from soil boring HA-12 contained 4-bromo phenyl ether at 0.49 J mg/kg, for which there is not a soil screening level. Arsenic and lead were detected below NYSDEC TAGM 4046 screening levels. Chromium was the only parameter detected at this location (20 J mg/kg) at a concentration above screening levels (10 mg/kg).

During the 1998/1999 Supplemental RI, five surface soil samples (SS-99-24, SS-99-25, SS-99-26, SS-99-27 and SS-99-31) were collected to evaluate the surface soil in the vicinity of the former liquid waste incinerator. Methylene chloride was the only VOC detected in these samples, at concentrations ranging from 0.003 N mg/kg to 0.05 N mg/kg. SVOCs were detected in each of these samples. SVOCs detected included 2-methyl naphthalene (0.067 J mg/kg to 2.8 J mg/kg), acenaphthene (0.57 J mg/kg to 3.8 mg/kg), anthracene (2.2 mg/kg to 2.4 J mg/kg), benzo(a)anthracene (0.089 J mg/kg to 12 J mg/kg), benzo(a)pyrene (0.077 J mg/kg to 3.3 mg/kg), benzo(b)fluoranthene (0.15 J to 4.8 J mg/kg), benzo(g,h,i,)perylene (0.81 J mg/kg), benzo(k)fluoranthene (0.042 J mg/kg to 1.8 J mg/kg), butyl benzyl phthalate (22 J mg/kg), carbazole (0.64 J mg/kg to 3.6 J mg/kg), chrysene (0.13 J mg/kg to 18 J mg/kg), dibenzo(a,h)anthracene (0.36 J mg/kg to 3.9

J mg/kg), dibenzofuran (0.34 J mg/kg to 2.5 J mg/kg), fluoranthene (0.1 J mg/kg to 21 J mg/kg), fluorene (0.9 mg/kg to 3.1 J mg/kg), indeno(1,2,3-c,d)pyrene (0.9 J mg/kg to 12 J mg/kg), naphthalene (0.82 J mg/kg), phenanthrene (0.075 J mg/kg to 24 mg/kg), phenol (0.85 J mg/kg), pyrene (0.26 J mg/kg to 29 mg/kg), and bis(2-ethylhexyl)phthalate (0.057 J mg/kg to 2.8 J mg/kg). PCBs (Aroclor 1248) were detected in each of these samples at concentrations ranging from 0.2 J mg/kg to 3900 mg/kg. Site-related metals including arsenic (4.6 mg/kg to 27.1 mg/kg), chromium (18.3 mg/kg to 32,000 mg/kg), copper (17.6 mg/kg to 4,790 mg/kg), lead (9.3 mg/kg to 717 mg/kg), nickel (17 mg/kg to 6,630 mg/kg) and zinc (47.2 mg/kg to 5,880 mg/kg) were also detected in these samples. In addition to site-related metals, sample SS-99-24 was analyzed for TAL metals. Detected metals other than site-related metals included aluminum, barium, beryllium, cadmium, calcium, cobalt, iron, magnesium, manganese, potassium, selenium, sodium, and vanadium.

Surface samples in this location were also analyzed for dioxins and furans. Dioxin congeners were detected in each of the surface soil samples, and were subsequently converted to 2,3,7,8-tetrachloro dibenzo-p-dioxin (TCDD) equivalents. The calculated 2,3,7,8-TCDD equivalents ranged from 10.46 to 916.41 ng/kg. The calculations to derive the 2,3,7,8-TCDD equivalents are included in Appendix D. Detected concentrations are depicted in Appendix C.

Results of the various investigations in this area indicate that SVOCs, PCBs and metals are present in soil above the NYSDEC TAGM 4046 screening levels. SVOCs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-c,d)pyrene, chrysene, and phenol were detected at concentration above the corresponding NYSDEC TAGM 4046 screening levels in samples SS-99-24, SS-99-26, SS-99-27, and SS-99-31, located west and south of the former liquid incinerator location. PCBs were detected at concentrations greater than the NYSDEC TAGM 4046 screening level in SS-99-25, SS-99-26, SS-99-27, and SS-99-31 at concentrations ranging from 2 J mg/kg to 3,900 mg/kg. Site-related metals detected at concentrations greater than the NYSDEC TAGM 4046 screening level included arsenic, chromium, copper, nickel, and zinc. In addition to site-related metals, metals beryllium and iron were detected above the corresponding NYSDEC TAGM 4046 screening levels in SS-99-24. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-7A, B, and C.

Former TCE storage area. During the 1998/1999 Supplemental RI, two soil borings (OBG-TB-30 and OBG-TB-38) were installed in the vicinity of the former TCE drum storage area. VOCs including 1,1-DCA (0.036 NJ mg/kg), 1,2-dichlorobenzene (0.013 mg/kg), methylene chloride (0.023 NJ mg/kg to 0.039 N mg/kg), TCE (0.001 mg/kg to 0.22 mg/kg), and cis-1,2-DCE (0.044 mg/kg) were detected in these borings. Bis(2-ethylhexyl)phthalate was the only SVOC detected in these samples at concentrations ranging from 0.077 J mg/kg to 0.48 mg/kg. PCB Aroclor 1248 was detected in both locations at concentrations ranging from 0.003 J mg/kg to 0.01 J mg/kg. Site-related metals including arsenic (1.9 mg/kg to 3.9 mg/kg), chromium (7.7 J mg/kg to 17.3 J mg/kg), copper (10.6 mg/kg to 12.4 mg/kg), lead (3 mg/kg to 4.7 mg/kg), nickel (7.3 mg/kg to 14.1 mg/kg), and zinc (16.3 mg/kg to 28.5 mg/kg) were also detected in these samples. Detected concentrations are depicted in Appendix C.

Constituents detected at concentrations greater than NYSDEC TAGM 4046 screening levels in subsurface soil in the vicinity of the former TCE storage area were limited to nickel and zinc. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-7A, B, and C.

Former fuel oil tanks area. During the 1998/1999 Supplemental RI, four soil borings (OBG-TB-31, OBG-TB-32, OBG-TB-43, and OBG-TB-44) were installed to investigate the former fuel oil tanks. As described in Section 2.1.1, the tank closure report was located following installation of the borings, and it indicated that the tanks were located east of these borings. The closure report, included in Exhibit F, indicated that confirmatory samples showed no detections. VOCs including methylene chloride (0.001 N mg/kg to 0.018 N mg/kg), TCE (0.002 mg/kg to 0.015 mg/kg), and cis-1,2-DCE (0.008 mg/kg) were detected in these samples. The SVOCs di-n-butyl phthalate (0.14 J mg/kg) and bis(2-ethylhexyl)phthalate (0.045 J mg/kg to 4.8 mg/kg) were also detected in these samples. PCB Aroclor 1248 was detected in this area at concentrations ranging from 0.004 J mg/kg to 190 mg/kg. Site-related metals arsenic (2 mg/kg to 6.2 mg/kg), chromium (2.9 mg/kg to 26.7 mg/kg), copper (12.3 mg/kg to 44.3 mg/kg), lead (2.9 mg/kg to 18.8 mg/kg), nickel (7.2 mg/kg to 55.9 mg/kg), and zinc (15.9 mg/kg to 553 J mg/kg) were also detected in these samples. Detected concentrations are depicted in Appendix C.

Constituents detected in subsurface soil at concentrations greater than NYSDEC TAGM 4046 screening levels in the vicinity of the fuel oil tanks included PCB Aroclor 1248 (190 mg/kg), site-related metals copper (44.3 mg/kg), nickel (13.7 mg/kg to 55.9 mg/kg), and zinc (26.6 mg/kg to 553 J mg/kg). Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-7A, B, and C.

Soil borings OBG-TB-38 and OBG-13 were also used to investigate the potential presence of NAPL in this area. The UV screening for NAPL was negative in these borings, indicating that no NAPL was present on the soil at those locations.

SO_2 scrubber area. One soil boring (HA-11) was installed by CRA in the vicinity of the SO_2 scrubber in August 1995, and one soil sample was collected and submitted for analysis of chromium, cadmium, copper, nickel, and cyanide. Cadmium, chromium, copper, nickel and cyanide were detected (0.63, 44 J, 37 J, 32 J, and 0.92 mg/kg, respectively) in the soil samples from soil boring HA-11, with chromium, copper, and nickel concentrations slightly above NYSDEC TAGM 4046 screening levels. Detected concentrations are depicted in Appendix C. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-7A, B, and C.

Summary. The sampling activities and associated results from the various investigations conducted in the IWT plant area indicate that surface and subsurface soil in this area contain PCBs, SVOCs, and site-related metals at concentrations in excess of the NYSDEC TAGM 4046 screening levels. Generally, PCB concentrations in surface soils above screening levels ranged from 2 to 14 mg/kg, with the exception of surface soil sample SS-99-26, that showed a detection of 3900 mg/kg. Based on data from surface soil samples SS-99-25 and SS-99-27, collected east and west of SS-99-26, the maximum detection appears isolated. PCB detections above the screening level in subsurface soil were limited to one subsurface soil sample (OBG-TB-44) at 190 mg/kg from the 2 to 4-ft interval, in the vicinity of the former fuel oil tanks. SVOCs were detected in eight surface soil samples at concentrations above screening levels, ranging up to 18 mg/kg. Arsenic, chromium, copper, lead, nickel, zinc, beryllium and iron are present above NYSDEC TAGM 4046 screening levels in soil in the vicinity of the IWT plant. Specific locations where constituents were detected at concentrations above the respective NYSDEC TAGM 4046 screening levels are summarized in Table 3-4, and listed as follows:

<u>PCBs</u>

- seven surface soil locations

- one subsurface soil location in the vicinity of the former fuel oil tanks (OBG-TB-44).

SVOCs
- eight surface soil locations.

Metals
- each of the surface and subsurface soil samples.

3.2.5. Former thinner tanks area

Soil in the location of the former thinner tanks was evaluated by EDI and CRA through the sampling of soil borings as described in Section 2. The soil sample data outside the manufacturing building ("T" borings) collected by EDI in 1986 indicated the presence of toluene, ethylbenzene and xylene in samples obtained from fourteen locations at varying depths. Concentrations of detected toluene ranged from 0.010 to 5.9 mg/kg; detected ethylbenzene concentrations ranged from 0.047 to 61 mg/kg; and detected xylene concentrations ranged from 0.020 to 330 mg/kg. The highest concentrations of these three constituents were generally evident in the soil samples obtained from the intervals 7 to 11 ft bgs, with detections down as deep as 15 feet. Concentrations of toluene, ethylbenzene and/or xylene were detected above NYSDEC TAGM 4046 screening levels at nine locations (EDI 1986b).

Two soil samples were collected by CRA in August 1995 from the HP-4 and HP-BH-5 locations inside the manufacturing building from the fill/native soil interface. The samples were submitted for analyses of PHS, PCBs, and VOCs. PCBs were detected in the HP-BH-5 soil sample at 0.071 mg/kg, below the NYSDEC TAGM 4046 screening level, and several VOCs were detected (methylene chloride at 0.016 mg/kg, acetone at 0.026 mg/kg, and toluene at 0.011 mg/kg), below the NYSDEC TAGM 4046 screening levels at this location. Neither PCBs nor VOCs were detected in sample HP-4.

During the 1998/1999 Supplemental RI, three soil borings (OBG-TB-45, OBG-TB-46, and OBG-TB-47) were installed to evaluate the subsurface in the vicinity of the transformer/switch house. No VOCs were detected in these samples. Benzo(a)pyrene and benzo(b)fluoranthene were detected in OBG-TB-46 and OBG-TB-47 at concentrations ranging from 0.18 mg/kg to 300 J mg/kg, which are greater than the corresponding NYSDEC TAGM 4046 screening levels. In addition, anthracene (170 mg/kg to 230 mg/kg), benzo(a)anthracene (0.77 to 350 mg/kg), benzo(g,h,i)perylene (0.41 mg/kg to 310 mg/kg), benzo(k)fluoranthene (0.34 mg/kg to 120 mg/kg), chrysene (0.82 mg/kg to 380 mg/kg), dibenzo(g,h,i)anthracene (0.18 mg/kg to 65 mg/kg), dibenzofuran (12 mg/kg to 21 mg/kg), fluoranthene (560 mg/kg to 1200 mg/kg), fluorene (65 mg/kg), indeno(c,d)pyrene (76 J mg/kg to 190 J mg/kg), phenanthrene (450 mg/kg to 670 mg/kg), and pyrene (480 mg/kg to

1000 mg/kg) were also detected in OBG-TB-46, above the corresponding NYSDEC TAGM 4046 screening levels. PCB Aroclor 1248 was detected in OBG-TB-46 and OBG-TB-47 at 0.1 J mg/kg to 0.3 J mg/kg. PCB Aroclor 1254 was detected at 0.03 mg/kg in OBG-TB-45.

In addition to the soil borings collected in this area, one surface soil sample (SS-99-05) was collected during the 1998/1999 Supplemental RI. Tetrachloroethene was the only VOC detected in this sample, at 0.002 J mg/kg. Metals including aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium and zinc were detected in this sample. SVOCs, PCBs, and metals were also detected in the 0 to 1-ft interval of OBG-TB-45, OBG-TB-46, and OBG-TB-47. Detected concentrations are depicted in Appendix C.

Results from the various investigations conducted to date indicate that constituents detected at concentrations greater than NYSDEC TAGM 4046 screening levels in subsurface soils in the vicinity of the thinner tanks area included toluene, ethylbenzene and xylene. Constituents detected at concentrations greater than the NYSDEC TAGM 4046 screening levels in subsurface soil in the vicinity of the transformer/switch house included anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i,)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene. Constituents detected at concentrations greater than NYSDEC TAGM 4046 screening levels in surface soils included SVOCs, PCBs, beryllium, iron, nickel, and zinc. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-9A, B, and C.

Summary. The sampling activities and associated results from the various investigation conducted in the former thinner tanks area indicate that soil in this area contain VOCs, SVOCs, and site-related metals. Toluene, ethylbenzene and xylene were detected at concentrations up to 720, 61 and 330 mg/kg, respectively, in subsurface soil in the former thinner tanks area. Generally, these concentrations were from samples collected from between 9 and 15 ft below grade, with the exception of samples collected from T-13, T-15, T-21, and HA-1 where detected concentrations above the screening levels were detected at shallower intervals of 5 to 7 ft below grade. The highest concentrations of SVOCs detected in both surface and subsurface soils at the site (up to 1200 and 560 mg/kg, respectively) were detected in one location (OBG-TB-46) in the vicinity of the transformer/switch house. Nickel, zinc, beryllium, and iron were also detected above screening levels in soil in the former thinner tanks area. Specific locations where constituents were detected at concentrations above the respective NYSDEC TAGM 4046 screening levels are summarized in Table 3-4, and listed as follows:

<u>VOCs</u>
- subsurface soil in the vicinity of the former thinner tanks

<u>SVOCs</u>
- surface and subsurface soil in the vicinity of the transformer/switch house

<u>Metals</u>
- one surface soil sample

3.2.6. Northeast property area

Soil in the area northeast of the manufacturing and administration building was evaluated by EDI and CRA as described in Section 2. The soil sampling and analysis activities did not indicate the presence of PCBs in samples obtained during the installation of monitoring wells P-3, P-4, P-11 and P-12, which are located in this general area (EDI 1985a). The results of one soil boring (HA-2) installed by CRA in an area of oil staining near the acid alkali bunker in August 1995 indicated the presence of arsenic (2.8 mg/kg), chromium (15 mg/kg), copper (21 mg/kg), lead (6.8 mg/kg) and nickel (16 mg/kg). VOCs, SVOCs, cyanide, and PCBs for this soil boring were not detected.

During the 1998/1999 Supplemental RI, two soil borings (OBG-TB-36 and OBG-TB-37) were installed in the vicinity of the administration building to evaluate the area of historic elevated TCE in ground water. Soil borings OBG-TB-34 and OBG-TB-35 were installed to evaluate sumps 1 and 4, and another soil boring (OBG-TB-24) was installed to evaluate the parking lot area. As discussed in Section 2.1, samples from OBG-TB-34 and OBG-TB-35 were screened for NAPL and not submitted for laboratory analysis. NAPL was not observed. VOCs including chloroform (0.004 N mg/kg to 0.005 N mg/kg), methylene chloride (0.001 NJ mg/kg to 0.009 N mg/kg), TCE (0.79 J mg/kg to 1.5 J mg/kg), cis-1,2-DCE (0.019 mg/kg) and trans-1,2-DCE (0.001 mg/kg) were detected in the subsurface soils. With the exception of bis(2-ethylhexyl)phthalate, SVOC detections in the soil borings were limited to OBG-TB-24 (down to the 6 to 8-ft interval) and the 0 to 1-ft interval of OBG-TB-36. Bis(2-ethylhexyl)phthalate was detected in all the soil borings at concentrations ranging from 0.052 J mg/kg to 0.49 J mg/kg. Other detected SVOCs in soil borings included 2-methyl naphthalene (0.061 J mg/kg to 0.14 J mg/kg), acenaphthylene (0.052 J mg/kg), anthracene

(0.062 J mg/kg), benzo(a)anthracene (0.059 J mg/kg to 0.19 J mg/kg), benzo(a)pyrene (0.059 J mg/kg to 0.64 J mg/kg), benzo(b)fluoranthene (0.098 J mg/kg to 1 j mg/kg), benzo(g,h,i,)perylene (0.11 J mg/kg to 0.27 mg/kg), benzo(k)fluoranthene (0.13 J mg/kg to 0.37 J mg/kg), butyl benzyl phthalate (0.046 J mg/kg), chrysene (0.071 J mg/kg to 0.74 J mg/kg), fluoranthene (0.09 J mg/kg to 0.64 mg/kg), fluorene (0.052 J mg/kg), indeno(1,2,3-c,d)pyrene (0.098 J mg/kg to 0.28 mg/kg), naphthalene (0.044 J mg/kg to 0.092 J mg/kg), phenanthrene (0.2 J mg/kg to 0.54 mg/kg), and pyrene (0.084 J to 1.8 J mg/kg). PCB Aroclor 1248 was detected in the soil borings OBG-TB-36 and OBG-TB-37 at concentrations ranging from 0.005 J mg/kg to 24 J mg/kg. Site-related metals including arsenic (2.3 mg/kg to 6.8 mg/kg), chromium (10.1 J mg/kg to 30.7 J mg/kg), copper (10.7 mg/kg to 37.1 mg/kg), lead (3.8 mg/kg to 31.9 mg/kg), nickel (9.3 mg/kg to 66 mg/kg), and zinc (23.5 mg/kg to 200 mg/kg) were also detected in these samples.

In addition to the soil borings, four surface soil samples (SS-99-14, SS-99-15, SS-99-16, and SS-99-17) were collected during the 1998/1999 Supplemental RI to evaluate surface soils in the vicinity of the administration building. Methylene chloride was the only VOC identified in the surface soil (SS-99-15), at 0.002 N mg/kg. SVOCs including 2-methyl naphthalene (0.047 J mg/kg to 0.051 J mg/kg), acenaphthene (0.94 J mg/kg), acenaphthalene (0.073 J mg/kg), anthracene (0.093 J mg/kg to 3.2 J mg/kg), benzo(a)anthracene (0.28 J to 7.7 mg/kg), benzo(a)pyrene (0.39 J to 6.9 J mg/kg), benzo(b)fluoranthene (0.56 J mg/kg to 10 J mg/kg), benzo(g,h,i)perylene (0.37 J mg/kg to 1.7 J mg/kg), benzo(k)fluoranthene (0.16 J mg/kg to 3.7 J mg/kg), carbazole (0.068 J mg/kg to 2.5 J mg/kg), chrysene (0.47 J mg/kg to 8.9 mg/kg), dibenzo(a, h)anthracene (0.17 J mg/kg), dibenzofuran (0.49 J mg/kg), fluoranthene (0.34 J mg/kg to 19 mg/kg), fluorene (0.051 J mg/kg to 1 J mg/kg), indeno(1,2,3-c,d)pyrene (0.29 J mg/kg to 2.1 J mg/kg), phenanthrene (0.29 j mg/kg to 15 mg/kg), pyrene (1 J to 21 mg/kg), and bis(2-ethylhexyl)phthalate (0.18 J mg/kg to 0.47 J mg/kg). PCB Aroclor 1254 was detected in surface soils at concentrations ranging from 0.2 J mg/kg to 7 mg/kg. Site-related metals arsenic (4.8 mg/kg to 6.3 mg/kg), chromium (21.6 mg/kg to 61.2 mg/kg), copper (25.9 mg/kg to 65.1 mg/kg), lead (19.8 mg/kg to 58.6 mg/kg), nickel (22 mg/kg to 97.8 mg/kg), and zinc (147 mg/kg to 170 mg/kg) were also detected in these samples. In addition to site-related metals, aluminum, antimony, barium beryllium, cadmium, calcium, cobalt, iron, magnesium, manganese, mercury, potassium, selenium, sodium, and vanadium were also detected in SS-99-17. SVOCs and metals were detected in the 0 to 1-ft surface interval of OBG-TB-36 and OBG-TB-37. VOCs and PCBs were also detected in OBG-TB-36. Detected concentrations are depicted in Appendix C.

Based on the results of the various investigations conducted to date, benzo(b)fluoranthene and benzo(a)pyrene were detected in the 0 to 1-ft surface interval of OBG-TB-36. Constituents detected in subsurface soils at concentrations greater than the NYSDEC TAGM 4046 screening level included benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene. Constituents detected in surface soils at concentrations greater than the NYSDEC TAGM 4046 screening level included benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and dibenzo(a,h)anthracene. TCE was the only VOC detected above the NYSDEC TAGM 4046 screening levels in subsurface soil in the northeast property area. VOCs were not detected above the screening level in surface soil in the northeast property area. PCB Aroclor 1254 was detected above the NYSDEC TAGM 4046 screening level in surface soil sample SS-99-17. PCB Aroclor 1248 was detected above the NYSDEC TAGM 4046 screening level in subsurface soil sample OBG-TB-37, at a depth of 12 to 14 ft below surface. Site-related metals chromium, copper, nickel, and zinc were detected at concentrations above the NYSDEC TAGM 4046 screening levels in surface and subsurface soil samples. In addition to site-related metals, beryllium and iron were also detected in SS-99-17 above the NYSDEC TAGM 4046 screening level. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-10A, B, and C.

Soil borings OBG-TB-36 and OBG-TB-37 were also used to investigate the potential presence of NAPL in this area. The UV screening for NAPL was negative in these borings, indicating that no NAPL was present on the soil at those locations.

Summary. The sampling activities and associated results from the various investigations conducted in the northeast property area indicate that surface and subsurface soil in this area contain PCBs, SVOCs, and site-related metals. In addition, TCE was detected marginally above the screening level in one subsurface soil sample in this area. PCB concentrations above the screening levels were detected in only one subsurface soil sample (OBG-TB-37) located adjacent to the administration building in the northeast property area at 24 J mg/kg collected from the 12 to 14-ft interval. PCBs were also detected in one surface soil sample (SS-99-17) collected adjacent to the manufacturing building in the northeast property area at 7 mg/kg. SVOCs were detected at concentrations marginally above the screening levels in surface and subsurface in this area. Copper, zinc, beryllium and iron are present above screening levels in soil in the northeast property area. In addition, chromium and nickel are present above screening levels in soil in the vicinity of the acid-alkali bunker Specific locations where constituents were detected at concentrations above the respective NYSDEC TAGM 4046 screening levels are summarized in Table 3-4, and listed as follows:

PCBs
- surface and subsurface soil in the northeast property area

VOCs
- one subsurface soil location in the northeast property area

SVOCs
- surface and subsurface soil in the northeast property area

Metals
- surface and subsurface soil in the northeast property area

3.2.7. Northern property area

Soil located in the northern property area has been evaluated in several of the past investigations described in Section 2. The results of these investigations are summarized as follows.

General northern property area. In 1985, EDI performed soil sampling associated with the installation of three ground water monitoring wells, designated P-5, P-6 and P-7, in the general area referred to as the northern property area. This area of the facility was historically undeveloped, and a portion was reportedly used as a former landfill. Another portion of the area was reportedly filled with construction debris and soil from facility excavations to raise its elevation, since the area was prone to flooding. Soil samples were analyzed for PCBs, which were not detected in the P-5 and P-6 samples. The sample from P-7 (4 to 6 ft depth) indicated a PCB concentration of 25 mg/kg (EDI 1985a).

NMPC installed nine borings south of Factory Avenue just north of GM's northern property boundary in 1996 at proposed utility pole locations. PCB Aroclor 1248 was detected in composite samples collected from eight of the nine locations at concentrations ranging from 1 to 15 mg/kg. Of the sixty-two grab samples collected at each 1 ft depth in each boring, eighteen showed visual discoloration and were analyzed for PCBs. PCB Aroclor 1248 was detected in six of these eighteen samples at concentrations ranging from 1.7 to 16 mg/kg. One of the composite samples (pole location 36C) contained PCBs at a concentration of 15 mg/kg. Three of the grab samples (from the 4 ft and 5 ft depth intervals at pole location 37E and 5 ft depth interval at pole location 39) exhibited PCB concentrations of 10.6, 16, and 10.5 mg/kg, respectively.

During the 1998/1999 Supplemental RI, four soil borings (OBG-TB-25, OBG-TB-26, OBG-TB-27, and OBG-TB-28) were installed to evaluate general fill in the northern property area. Chloroform and methylene chloride (0.001 N mg/kg to 0.015 N mg/kg) were the only VOCs detected in these samples. No SVOCs were detected in these samples. PCB Aroclor 1242 was detected in OBG-TB-25 at 0.06 mg/kg and in OBG-TB-28 at 44 mg/kg. Aroclor 1248 was detected in each of the soil borings, with the exception of OBG-TB-27, at concentrations ranging from 0.2 to 2 mg/kg. Site-related metals including arsenic (1.7 mg/kg to 9.9 mg/kg), chromium (8.5 mg/kg to 106 J mg/kg), copper (8.5 mg/kg to 62 mg/kg), lead (3 mg/kg to 23.8 mg/kg), nickel (6.9 mg/kg to 54.1 mg/kg), and zinc (14 mg/kg to 212 mg/kg) were also detected in these samples. Copper, nickel, zinc and PCBs were detected in the 0 to 1-ft interval of these soil borings. Detected concentrations are depicted in Appendix C.

Based on results from the various investigations conducted in the northern property area, constituents detected at concentrations greater than the NYSDEC TAGM 4046 screening levels in subsurface soil in this area included PCBs, arsenic, chromium, copper, nickel and zinc. PCBs, copper, nickel, and zinc were detected in surface soil above the screening levels in the surface interval of the soil borings. PCB concentrations above the NYSDEC TAGM 4046 screening levels were detected in samples collected from soil boring P-7 and OBG-TB-28 in the vicinity of the former drainage swale. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-11A, B, C, D, and E.

Soil borings OBG-TB-25, OBG-TB-26, OBG-TB-27 and OBG-TB-28 were also used to investigate the potential presence of NAPL in this area. The UV screening for NAPL was negative in these borings, indicating that no NAPL was present on the soil at those locations.

Former drainage swale. During the 1985 Phase II Hydrogeological Investigation, EDI installed a series of soil borings in the general area of monitoring well P-7 to evaluate soil quality in the suspected location of a former drainage swale which, based on a review of aerial photos, existed in this area. A 1957 aerial photo which depicts the former drainage swale is presented in Exhibit H. The investigation consisted of the installation of eleven soil borings, designated 003-1 through 003-11. The results of the PCB analysis performed on thirty samples from soil borings 003-1 to 003-10 indicated PCBs present at varying concentrations and depths, ranging from less than detectable to 8000 mg/kg. In general, the analytical data indicate the higher concentrations of PCBs are present within the upper 8 ft of soil, but are not concentrated at one soil horizon. PCB concentrations in the gray silty clay at the bottom of the suspected fill are below or slightly above detection limits, with detectable concentrations present in borings which had higher concentrations in the overlying fill materials. A cross-sectional representation of these data, along with the cross section location, are presented as Exhibit J of the 1997 Preliminary RI/FS Report (EDI 1986a).

A soil sampling and analysis program was performed in the vicinity of the former drainage swale in 1990 by O'Brien & Gere. This program consisted of the installation and sampling of eighteen soil borings along the right of way for the proposed Ley Creek Relief Interceptor sewer, which extended in the east-west direction just north of GM's northern property boundary. Samples from soil borings B-1 to B-16 were analyzed for PCBs, with the results indicating PCB concentrations ranging from 5.5 to 9600 mg/kg. These samples were collected from depths of up to 10 ft bgs. As with the previous sampling performed by EDI, the results indicated that the highest PCB concentrations occur in the upper 8 ft of soil. The highest concentrations appeared in soil borings installed west of Outfall 003 (O'Brien & Gere 1990).

One soil sample collected from boring B-17 in 1990 by O'Brien & Gere was analyzed for waste characterization purposes prior to the IRM. Analyses included ash content, heat of combustion, PCBs, total organic halogens, TCLP metals, SVOCs, and VOCs. The leachable chromium concentration in this sample (73.8 mg/L) exceeded the RCRA TCLP limit of 5 mg/L. Other leachable metal concentrations were below RCRA TCLP limits. The ash content and heat of combustion for this sample were 73.3 % and less than 10 BTU/lb, respectively. The total organic halogen concentration was reported as less than 0.1 %. PCBs were detected at 3848 mg/kg. VOCs and SVOCs were not detected in this sample. One additional sample from the vicinity of boring B-17 and three samples from boring B-18 were analyzed for TCLP chromium in 1990. Leachable chromium concentrations in these samples were less than detectable (O'Brien & Gere 1991).

The area of the proposed sewer line was excavated in 1991, and GM implemented an IRM program to address the PCB-impacted soil and ground water which was generated by the project. The NYSDEC-approved IRM work plan (O'Brien & Gere Technical Services 1991) called for a confirmatory sampling and analysis program to be performed following removal of the PCB-impacted soil, and prior to the installation of the sewer line. The confirmatory sampling program included the collection and analysis of fifteen soil samples from the base of the IRM excavation. The results indicated non-detectable concentrations of PCBs (O'Brien & Gere 1992b).

In conjunction with installation of the Ley Creek Relief Interceptor Sewer, Onondaga County collected subsurface soil samples from borings installed in the pipeline route, and from the pipeline excavation. These data are included in Exhibit E of the 1997 Preliminary RI/FS Report. PCB concentrations in subsurface soil samples ranged from less than detectable to 2500 mg/kg. Higher PCB detections were generally present at depths of 6 to 10 ft (Onondaga County 1991).

Onondaga County also collected surface soil samples in the vicinity of Former IFG facility along the route of the Ley Creek Relief Interceptor Sewer following completion of construction. PCBs were detected above the detection limit of 1 mg/kg in twelve of sixteen samples collected between the sewer and Factory Avenue. Detected PCB concentrations ranged from 2 mg/kg to 130 mg/kg, above the NYSDEC TAGM 4046 screening level for surface soil, 1 mg/kg.

An investigation was also conducted by O'Brien & Gere at the Ley Creek PCB Dredgings site to evaluate if the elevated PCB concentrations associated with the former drainage swale south of Factory Avenue extend to the north side of Factory Avenue. PCBs observed north of Factory Avenue in this area during this investigation were not as elevated as those observed in the vicinity of the former drainage swale south of Factory Avenue. A summary of this investigation is presented in Exhibit I of the 1997 Preliminary RI/FS Report.

During the 1998/1999 Supplemental RI test trenching (test trenches 5 through 12) was performed to evaluate the former drainage swale. The former drainage swale was visually evident as a black silt layer mixed with some organic matter during the trenching activities, encountered in test trenches 6 through 9 and in trenches 11 and 12. The former swale was encountered at depths between 8 and 10 ft below grade, and varied in width from approximately 20 ft to 60 ft; though in trench 7, swale material was encountered for approximately 120 ft. Trench 7 is likely parallel to the former swale in this area, thus, the 120 ft is not likely representative of the width of the swale in this area. The approximate location of the former swale, based on these trenching activities, is depicted in Figure 3-11A.

During the 1998/1999 Supplemental RI test trenching activities, twelve samples (T5-1, T5-2, T6-1, T7-1, T8-1, T8-2, T8-3, T9-1, T10-1, T11-1, T12-1, and T12-2) were collected in this area. Results showed that concentrations of chlorobenzene (13 mg/kg), methylene chloride (0.001 N mg/kg to 0.002 N mg/kg), ethylbenzene (0.021 N mg/kg to 10 N mg/kg), toluene (0.009 N mg/kg to 8.8 N mg/kg), xylene (0.035 NJ mg/kg to 110 N mg/kg), cis-1,2-DCE (11 mg/kg), and trans-1,2-DCE (0.003 mg/kg) were present in these samples. Sample T09-1 was the only drainage swale trench sample analyzed for SVOCs, and it showed detections of benzo(a)anthracene, chrysene, fluoranthene, phenanthrene, pyrene, and bis(2-ethylhexyl)phthalate at low concentrations ranging from 0.097 J mg/kg to 1.8 J mg/kg. PCBs were detected in each of the trench samples. PCB Aroclor 1242 was detected in trenches 6 through 9 and trench 11 at concentrations ranging from 84 mg/kg to 6,800 mg/kg. PCB Aroclor 1248 was detected in trenches 5, 10 and 12 at concentrations ranging from 0.02 J mg/kg to 3800 mg/kg. Site-related metals including arsenic (2.6 mg/kg to 12.9 mg/kg), chromium (13.9 mg/kg to 34,900 J mg/kg), copper (14.6 mg/kg to 6,990 mg/kg), lead (5 mg/kg to 208 J mg/kg), nickel (13 mg/kg to 19,700 mg/kg), and zinc (33.6 mg/kg to 4,730 J mg/kg) were also detected in these samples. Detected concentrations are depicted in Appendix C.

Based on results of the various investigations conducted in the area of the former swale, constituents detected at concentrations greater than the NYSDEC TAGM 4046 screening levels in soil from this area included PCBs (Aroclors 1242 and 1248) and site-related metals arsenic, chromium, copper, nickel, and zinc. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-11A, B, C, D and E.

Former storage cell location. Upon completion of the transportation and off-site disposal of the IRM soil in late 1993, a surface soil sampling event was performed in the former footprint of the soil storage cell located near the northwestern corner of GM's property. The results indicated detectable concentrations of PCB Aroclor 1248, ranging from 1.3 to 6.3 mg/kg, above the NYSDEC TAGM 4046 screening level for surface soil, 1 mg/kg (O'Brien & Gere 1994). Detected concentrations are depicted in Appendix C. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-11A, B, C, D, and E.

On-site landfill. In 1995, CRA installed three soil borings within the suspected location of the landfill located in the northwestern portion of the facility. Results of this analysis indicated the presence of vinyl chloride (0.12 mg/kg), toluene (0.007 to 0.27 mg/kg), xylenes (0.110 mg/kg), PCB Aroclor 1248 (3.7 to 4.6 mg/kg), arsenic (1.9 to 48 mg/kg), chromium (23 to 2900 mg/kg), copper (37 to 6600 mg/kg), cyanide (0.86 mg/kg), lead (10 to 31 mg/kg), nickel (23 to 1300 mg/kg) and selenium (0.87 to 2.3 mg/kg). The higher concentrations of metals were generally detected in boring BH-2.

Chromium, copper and nickel were detected above soil screening values in the samples from soil borings BH-1, BH-2 and BH-3. Additionally, methylene chloride, arsenic, and selenium were detected above soil screening levels in the sample from soil boring BH-1.

During the 1998/1999 Supplemental RI, eight surface soil samples (SS-99-06, SS-99-07, SS-99-08, SS-99-09, SS-99-10, SS-99-11, SS-99-12, and SS-99-13) were collected in the area of the landfill. Detected VOCs include chloroform (0.019 N mg/kg), methylene chloride (0.002 NJ mg/kg to 0.017 N mg/kg), TCE (0.004 mg/kg to 46 J mg/kg), benzene (0.005 J mg/kg), carbon disulfide (0.038 J mg/kg), PCE (0.012 J mg/kg), and cis-1,2-DCE (0.34 mg/kg). Detected SVOCs included 1,2-dichlorobenzene (0.059 J mg/kg), 2-methyl naphthalene (0.09 J mg/kg to 0.23 J mg/kg), benzo(a)anthracene (0.12 J mg/kg to 0.27 J mg/kg), benzo(a)pyrene (0.16 J mg/kg to 0.37 J mg/kg), benzo(b)fluoranthene (0.043 J mg/kg to 0.63 J mg/kg), benzo(g,h,i,)perylene (0.05 J mg/kg to 0.13 J mg/kg), benzo(k)fluoranthene (0.061 J mg/kg to 0.02 J mg/kg), chrysene (0.042 J mg/kg to 0.2 J mg/kg), di-n-octyl phthalate (56 mg/kg), dibenzofuran (0.048 J mg/kg to 0.055 J mg/kg), fluoranthene (0.048 J mg/kg to 0.46 J mg/kg), indeno(1,2,3-c,d)pyrene (0.067 mg/kg to 0.14 J mg/kg), naphthalene (0.04 J mg/kg to 0.16 J mg/kg), phenanthrene (0.085 J mg/kg to 0.25 J mg/kg), pyrene (0.068 J mg/kg to 0.57 J mg/kg), and bis(2-ethylhexyl)phthalate (0.067 J mg/kg to 0.26 J mg/kg). PCB Aroclor 1254 was detected in SS-99-01 at 0.2 mg/kg. PCB Aroclor 1248 was detected in the remaining samples at concentrations ranging from 3 mg/kg to 2,600 J mg/kg. Site-related metals arsenic (2.7 mg/kg to 15 mg/kg), chromium (14.2 mg/kg to 1,770 mg/kg), copper (11.8 mg/kg to 267 mg/kg), lead (7.8 mg/kg to 45.5 mg/kg), nickel (11.8 mg/kg to 443 mg/kg), and zinc (25 mg/kg to 394 mg/kg), and the heavy metal mercury (0.029 J mg/kg to 0.095 mg/kg) were also detected in these samples. In addition, aluminum, barium, beryllium, cadmium, calcium, cobalt, iron, magnesium, manganese, mercury, potassium, selenium, sodium, thallium, and vanadium were detected in SS-99-10. Detected concentrations are depicted in Appendix C.

Constituents detected in this area at concentrations greater than the NYSDEC TAGM 4046 screening levels included TCE, cis-1,2-DCE, benzo(a)pyrene, benzo(b)fluoranthene, di-n-octyl-phthalate, PCBs (Aroclor 1248), and site-related metals arsenic, chromium, copper, nickel, and zinc. In addition, beryllium, iron, and selenium were also detected above the respective NYSDEC TAGM 4046 screening levels. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-11A, B, C, D, and E.

In addition to the surface soil samples, test trenching was performed during the 1998/1999 Supplemental RI to evaluate the extent of the on-site landfill. The limits of the on-site landfill were identified based on visual observation during the trenching activities. Paint sludge, fly ash, and sludge material were observed during the trenching activities. Trench logs are included in Exhibit B. The approximate location of the on-site landfill is shown in Figure 1-10. It should be noted that the northern extent of the landfill was not encountered during the trenching activities, as trenching stopped at the fence line during excavation of Trench 4. Seventeen samples (T1-1, T1-2, T1-3, T1-4, T2-1, T2-2, T2-3, T2-4, T3-1, T3-2, T3-3, T3-4, T3-5, T3-6, T4-1, T4-2, and T4-3) were collected during the test trenching activities in this area. As described in Exhibit B, the samples were of landfill materials, such as fill material, sludge, fly ash, and stained soil. Detected VOCs included 1,1-DCE (0.002 J mg/kg), methyl ethyl ketone (0.007 J mg/kg), acetone (0.025 J mg/kg to 0.032 J mg/kg), benzene (0.001 J mg/kg to 0.002 J mg/kg), carbon disulfide (0.002 J mg/kg to 0.004 J mg/kg), ethyl benzene (0.0008 NJ mg/kg to 11 J mg/kg), methylene chloride (0.002 N mg/kg), toluene (0.002 NJ mg/kg to 110 NJ mg/kg), TCE (0.004 mg/kg to 0.053 J mg/kg), xylene (0.002 NJ mg/kg to 84 NJ mg/kg), cis-1,2-DCE (0.002 J mg/kg to 0.47 J mg/kg), and trans-1,2-DCE (0.009 J to 0.011 J mg/kg). Detected SVOCs included 1,2-dichlorobenzene (0.81 J mg/kg), 2,4-dimethyl phenol (0.078 J mg/kg to 15 mg/kg), 2-methyl naphthalene (0.079 J mg/kg to 11 mg/kg), 2-methyl phenol (0.1 J mg/kg to 0.44 J mg/kg), 4-bromophenyl phenyl ether (3.1 J mg/kg), 4-chloro-3-methylphenol (0.28 J mg/kg), 4-methylphenol (0.043 J mg/kg to 3.9 mg/kg), acenaphthene (0.058 J mg/kg to 0.086 J mg/kg), anthracene (0.092 J mg/kg), benzo(a)anthracene (0.045 J mg/kg to 0.13 J mg/kg), benzo(b)fluoranthene (0.041 J mg/kg to 0.12 J mg/kg), butyl benzyl phthalate (0.14 J mg/kg), carbazole (0.1 J mg/kg), chrysene (0.072 J mg/kg to 0.25 J mg/kg), dibenzofuran (0.12 J mg/kg to 0.36 J mg/kg), fluoranthene (0.042 J mg/kg to 0.14 J mg/kg), naphthalene (0.052 NJ mg/kg to 2.3 J mg/kg), phenanthrene (0.11 J mg/kg to 1.1 mg/kg), phenol (0.067 J mg/kg to 0.23 J mg/kg), pyrene (0.048 J mg/kg to 0.51 J mg/kg), and bis(2-ethylhexyl)phthalate (0.058 J mg/kg to 16 mg/kg). PCB Aroclor 1248 was detected in each trench at concentrations ranging from 0.9 mg/kg to 2,700 mg/kg. PCB Aroclor 1242 was also detected in trench 3 at concentrations ranging from 5 to 1400 mg/kg. The highest PCB concentrations corresponded to samples (T01-1, T01-2, T01-3, T02-3, and T04-1) of paint sludge, other sludge, or stained material. Site-related metals including arsenic (4.2 mg/kg to 65.7 mg/kg), chromium (19.1 mg/kg to 17,200 mg/kg), copper (22.1 mg/kg to 23,200 mg/kg), lead (7.3 mg/kg to 291 mg/kg), nickel (22.2 mg/kg to 7,940 mg/kg), and zinc (52.1 mg/kg to 53,300 mg/kg) and the heavy metal mercury (0.033 J mg/kg to 0.16 mg/kg) were also detected in these samples. In addition, aluminum, barium, beryllium, calcium, cobalt, iron, magnesium, manganese, mercury, potassium, selenium, sodium, thallium, and vanadium were detected in T2-1. Detected concentrations are depicted in Appendix C.

Based on the various investigations conducted to date in the on-site landfill area, constituents detected in this area at concentrations greater than the NYSDEC TAGM 4046 screening levels included 2-methylphenol, 4-chloro-3-methylphenol, phenol, PCB Aroclors 1242 and 1248, and site-related metals arsenic, chromium, copper, nickel, and zinc. In addition, barium, mercury, beryllium, iron, and selenium were also detected above the respective NYSDEC TAGM 4046 screening levels. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-11A, B, C, D, and E.

Closed surface impoundments. During the 1998/1999 Supplemental RI, three soil borings (OBG-TB-29, OBG-TB-41, and OBG-TB-42) were installed in the vicinity of closed surface impoundments, located north of the manufacturing facility, in the northern property area. Soil boring OBG-TB-39 was installed to observe whether impoundment #1 extends beneath the manufacturing building. Based on this soil boring, impoundment #1 does not extend beneath the building. Methylene chloride (0.002 N mg/kg to 0.018 N mg/kg), toluene (0.001 N mg/kg), and TCE (0.004 mg/kg to 1.2 mg/kg) were the only VOCs detected in these samples. Bis(2-ethylhexyl)phthalate was the only SVOC detected in these samples (1.2 mg/kg to 1.9 mg/kg) in OBG-TB-29. PCB Aroclor 1248 was detected in each these samples at concentrations ranging from 0.003 J to 0.3 mg/kg. Site-related metals arsenic (1.9 mg/kg to 6 mg/kg), chromium (8.4 J mg/kg to 30.1 J mg/kg), copper (7.1 mg/kg to 23.6 mg/kg), lead (2.9 mg/kg to 10.4 mg/kg), nickel (7.3 mg/kg to 28.5 mg/kg), and zinc (15.1 mg/kg to 54.3 mg/kg) were also detected in these samples. Detected concentrations are depicted in Appendix C.

Constituents detected at concentrations greater than the NYSDEC TAGM 4046 screening levels included nickel and zinc. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-11A, B, C, D, and E.

Soil borings OBG-TB-41 and OBG-TB-42 were also used to investigate the potential presence of NAPL in this area. The UV screening for NAPL was negative in these borings, indicating that no NAPL was present on the soil at those locations.

Summary. The sampling activities and associated results from investigations conducted to date indicate that subsurface soil in portions of the northern property area contain concentrations of PCBs, metals, SVOCs, and VOCs. In addition, PCBs, copper, nickel, and zinc were detected above screening levels in surface soil. With the exception of one sample (SS-99-06), concentrations of PCBs detected in surface soil in the on-site landfill area ranged from 3 to 200 mg/kg. PCBs were detected at 2,600 mg/kg in SS-99-06, located near the property boundary in close proximity to the NMPC property. PCBs ranging from 2 to 26 mg/kg were detected in the surface interval of the borings installed in the general fill area. Subsurface material samples collected during the trenching activities in the on-site landfill area showed detections of PCBs above screening levels ranging from 17 mg/kg to 1,500 mg/kg. The highest concentrations corresponded to samples (T01-1, T01-2, T01-3, T02-3, and T04-1) of paint sludge, other sludge, or stained material. Subsurface material samples collected during the trenching activities in the area of the former drainage swale showed concentrations of PCBs above screening levels ranging from 84 to 6800 mg/kg. The highest concentrations (T06-1, T08-2, T12-1, and T12-2) corresponded to samples of organic material having an oily odor, sludge like soil, and black silts having a paint thinner odor. One subsurface soil sample (OBG-TB-28) in the general fill area showed a PCB detection of 44 mg/kg in the 12 to 14-ft interval. This sample is also located in the former swale area. The former drainage swale was visually evident as a black silt layer mixed with some organic matter during the trenching activities, and the approximate location of the former drainage swale is shown in Figures 3-11A, B, C, D, and E. The higher PCB concentrations were associated with the black silt layer. It should be noted that historically high PCB concentrations (up to 9700 mg/kg) were detected in subsurface soil in the vicinity of Factory Avenue during the Ley Creek Interceptor Sewer project; however, because these soils were removed as part of that project (as described in Section 4.1.5), these detections are not presented here.

VOCs including TCE and cis-1,2-DCE were detected in one sample close to the property boundary west of the estimated limits of the on-site landfill. Xylene and ethylbenzene were also detected in subsurface material in the on-site landfill area at concentrations above screening levels ranging from 4 to 210 mg/kg, and 7.8 to 36 mg/kg. These concentrations were detected in samples of black sandy material (possibly ash) and paint sludge. Xylene and ethylbenzene were also detected in T-30, a location downgradient of the former thinner tanks area. SVOCs benzo(a)pyrene, benzo(b)fluoranthene, and di-n-octyl phthalate were detected above screening levels in surface soil in the vicinity of the on-site landfill. 2-methylphenol, 4-chloro-3-methylphenol, and phenol were detected above screening levels in subsurface material in the vicinity of the on-site landfill.

Arsenic, chromium, copper, nickel, and zinc barium, mercury, beryllium, iron, and selenium are present above NYSDEC TAGM 4046 screening levels in soil and landfill material in the northern property area. Specific locations where constituents were detected at concentrations above the respective NYSDEC TAGM 4046 screening levels are summarized in Table 3-4, and listed as follows:

PCBs
- former drainage swale
- surface soil in the vicinity of the former storage cell location
- surface and subsurface soil in the vicinity of the on-site landfill

VOCs
- surface soil in the vicinity of the on-site landfill (TCE and cis-1,2-DCE)

SVOCs
- surface soil in the vicinity of the on-site landfill (benzo(a)pyrene, benzo(b)fluoranthene, and di-n-octyl phthalate)
- subsurface soil in the vicinity of the on-site landfill (2-methylphenol, 4-chloro-3-methylphenol, and phenol)

Metals
- general northern property area, in the general fill area (arsenic, chromium, copper, nickel and zinc)
- former drainage swale (arsenic, chromium, copper, nickel and zinc)
- surface soil in the vicinity of the on-site landfill (arsenic, chromium, copper, nickel and zinc)
- subsurface soil in the vicinity of the on-site landfill (arsenic, chromium, copper, nickel, zinc, barium, mercury, beryllium, iron, and selenium)
- closed impoundments (nickel and zinc).

3.2.8. Southwest property area

During the 1998/1999 Supplemental RI, five soil borings (OBG-TB-20, OBG-TB-21, OBG-TB-33, OBG-TB-39, and OBG-TB-40) were installed to evaluate the subsurface soil in the vicinity of the mold storage building. VOCs including methylene chloride (0.001 N mg/kg to 0.034 N mg/kg), TCE (0.002 mg/kg to 2 J mg/kg), and toluene (0.002 N mg/kg) were detected in these subsurface soil samples. SVOCs were detected primarily in OBG-TB-21 and included 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i,)perylene, benzo(k)fluoranthene, carbazole, chrysene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene. Bis(2-ethylhexyl)phthalate was detected in each soil boring at concentrations ranging from 0.059 J mg/kg to 6.1 mg/kg. PCBs were detected in each soil boring at concentrations ranging from 0.002 J mg/kg to 44 mg/kg. Site-related metals including arsenic, chromium, copper, lead, nickel and zinc were also detected at concentrations ranging from 1.7 mg/kg to 75 mg/kg. Detected concentrations are depicted in Appendix C.

The NYSDEC TAGM 4046 screening level for TCE was exceeded in OBG-TB-39 in the 10 - 12 ft below grade interval. SVOCs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and chrysene also exceeded NYSDEC TAGM 4046 screening levels. In OBG-TB-21 (0 to 1 ft), the TAGM screening level was exceeded for PCBs (Aroclor 1248). Site-related metals that exceeded NYSDEC TAGM 4046 included chromium, copper, nickel, and zinc. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-8A, B, and C.

Soil borings OBG-TB-39 and OBG-TB-40 were also used to investigate the potential presence of NAPL in this area. The UV screening for NAPL was negative in these borings, indicating that no NAPL was present on the soil at those locations.

In addition, four surface soil samples (SS-99-01, SS-99-02, SS-99-03 and SS-99-04) were installed to investigate surface conditions in the vicinity of the hazardous waste storage area. Methylene chloride was detected in surface soil samples SS-99-01, SS-99-03, and SS-99-04 at concentrations ranging from 0.001 NJ mg/kg to 0.011 J mg/kg. SVOCs were detected in all four surface soil samples collected in this area. Detected SVOCs included 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, butyl benzyl phthalate, carbazole, chrysene, di-n-butyl phthalate, dibenzofuran, dimethyl phthalate, fluoranthene, fluorene, hexachlorobenzene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, phenol, pyrene, and bis(2-ethylhexyl)phthalate. PCBs were detected in all four surface soil samples at concentrations ranging from 0.4 mg/kg to 20 mg/kg. Site-related metals including arsenic, chromium, copper, lead, nickel, and zinc were also detected. Aluminum, barium, beryllium, cadmium, calcium, cobalt, iron, magnesium, manganese, mercury, potassium, selenium, sodium, and vanadium were also detected in SS-99-02. Detected concentrations are depicted in Appendix C.

The results from investigations conducted to date indicate that the NYSDEC TAGM 4046 screening levels were exceeded primarily in SS-99-01 and SS-99-04. SVOCs that exceeded NYSDEC TAGM 4046 screening levels included benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and phenol. PCBs (Aroclor 1248) exceeded the NYSDEC TAGM 4046 screening level in surface soil samples SS-99-01, SS-99-03, and SS-99-04. Site-related metals chromium, copper, nickel, and zinc also exceeded the NYSDEC TAGM 4046 screening levels. Beryllium and lead were also detected above the NYSDEC TAGM 4046 screening levels in surface soil sample SS-99-02. Detected concentrations greater than the NYSDEC TAGM 4046 screening levels are depicted on Figures 3-8A, B, and C.

Summary. The sampling activities and associated results from the various investigations conducted to date indicate that soil in the southwest property area contains PCBs, VOCs, SVOCs, and site-related metals. PCBs were detected above screening levels in three surface soil locations in the vicinity of the former storage pad at concentrations ranging from to 2 to 44 mg/kg. TCE was present in subsurface soil in the southwest property area. SVOCs were detected above the screening level in both surface and subsurface soil in this area. Concentrations of site-related metals chromium, copper, nickel, and zinc also exceeded the screening levels in both surface soils and subsurfaces soils. Beryllium and lead were also detected above the screening levels in one surface soil sample. Specific locations where constituents were detected at concentrations above the respective NYSDEC TAGM 4046 screening levels are summarized in Table 3-4 and listed below:

<u>PCBs</u>

- surface and subsurface soil in the southwest property area

<u>VOCs</u>

- subsurface soil in the southwest property area (TCE)

<u>SVOCs</u>

- surface and subsurface soil in the southwest property area

<u>Metals</u>

- surface and subsurface soil in the southwest property area

3.3. Ground water

In order to present the most current ground water conditions, the ground water discussion in this report is limited to the latest ground water results. This section discusses the ground water chemistry for the former thinner tanks area separate from the site wide ground water sampling. The analysis of the wells in the former thinner tanks area is primarily limited to BTEX compounds and these wells have been sampled routinely since 1986. The site wide ground water is discussed based on VOCs, SVOCs, PCBs and metals for both the shallow and deep overburden ground water zones. Historic ground water quality is presented in the Preliminary RI/FS Report (O'Brien & Gere 1997).

Consistent with the NYSDEC comments (Benjamin 1999), the following sampling events are discussed in this section:

- July 29, 1999- former thinner tanks area (T-1, T-2, T-3, T-4, T-5, T-10, T-13, T-15, T-18, T-21, T-24, T-26, T-29, T-33B, and P-9)

- July 8 and 19, 1999- former thinner tanks area (OBG-PZ-1, OBG-PZ-2, OBG-PZ-3 and OBG-PZ-7)

- August 17-18, 1999 - Supplemental RI wells in or near manufacturing Building - (MWI-1, MWI-2, MWI-3 and WT-3R).

- November 1999 - Closed surface impoundments #1 and #2 semiannual sampling - (MW-1S, MW-1D, MW-2S, MW-2D, MW-3S, MW-3D, MW-4S, MW-4D, MW-5S, and MW-5D)

- November 1999 - former thinner tanks area (T-1, T-2, T-3, T-4, T-5 T-10, T-13, T-15, T-18, T-21, T-24, T-29, and T-33B)

- November 1999 - Supplemental RI wells (OBG-2, OBG-3, OBG-3D, OBG-5, OBG-7A, OBG-6S, OBG-6D, OBG-7S, OBG-7D, OBG-8S, OBG-8D, OBG-9S, OBG-9D, OBG-10S, OBG-10D, OBG-11, OBG-12, OBG-13, OBG-15, P-2, P-9, U-1D, U-1S, W-1D, W-1S, W-6S, W-6D, W-11S, and W-11D).

As previously described in Section 2.2.5, low flow sampling methods were used for samples collected between August and November 1999. As part of the sampling effort a total of 56 wells were sampled. Thirty-three wells were sampled as part of the Supplemental RI. In addition, 13 wells were sampled as part of the quarterly monitoring event for the former thinner tanks area and 10 wells were sampled as part of the semi-annual event for the surface impoundment.

The ground water chemistry discussion includes VOCs, SVOCs, PCBs, and metals analyses. In this discussion, analytical data are compared with the NYS Ambient Water Quality Standards and Guidance Values for Class GA ground water. Comprehensive summaries of ground water data for detected constituents are presented in Tables 3-12, 3-13, 3-14, and 3-15. Those compounds detected above NYS Class GA ground water standards are flagged with a "Y" and are also presented on these tables. Ground water analytical data from the site (excluding the former thinner tanks area) are illustrated on Figure C-6, while data for the former thinner tanks area are illustrated on Figure 3-13. Ground water data that exceeds screening levels are presented on Figure 3-12.

Additionally, the full set of analytical results and the corresponding data validation reports for the 1999 sampling events are included in the Analytical Data Summary Report (O'Brien & Gere 2000a).

3.3.1. Volatile organic compounds

This section includes discussions of analytical data for VOCs detected in the vicinity of the site. Data from the former thinner tanks area is discussed separately from the site wide ground water chemistry, as the source of contamination has been defined and ground water monitoring has been completed in this area since 1985.

Former thinner tank area

The former thinner tanks area is located in the northwest portion of the site. In 1985 a leak was detected in the vicinity of the three- 8,000 gallons USTs. As a result, an initial investigation was completed in 1985 and an additional investigation was completed in 1986 to further evaluate the downgradient extent of ground water contamination. In 1985, approximately 320 gallons of free-phase product was collected and the three USTs were removed.

The 1986 EDI report stated that the highest levels are found immediately adjacent to the former USTs and in wells in or next to backfilled trenches of underground pipelines. This would indicate that preferred movement of contaminated ground water is along the more permeable backfill of the utilities. Utilities in the area include a fire protection line (estimated to be 5.5 ft below grade), the former thinner transfer lines (estimated to be less than 6 ft below grade), a 42-inch active storm sewer (invert approximately 7.5 ft below grade) and a 24-inch abandoned storm sewer located along the western edge of the manufacturing building. The depth of the abandoned storm sewer is likely similar to the 42-inch active storm sewer.

Two ground water interceptor trenches were installed in this area. The southern trench is oriented north-south and east-west in an L- shape and is adjacent to the Former UST pit. The northern trench is oriented east-west, parallel with the northern boundary of the 1975 manufacturing building expansion. The combined yield of the recovery trenches is approximately 0.2 gpm. The water is currently pumped to the IWT Plant area, treated and then discharged through Outfall 003 under the September 25, 1997 SPDES permit.

From 1986 through September 25, 1997 ground water samples were collected twice per month from 10 wells as required by the 1986 SPDES Consent Order. Since September 25, 1997, the effective date of the Order, quarterly ground water samples have been collected from 15 wells, and an additional four wells are sampled annually. In February 2000 , NYSDEC and GM agreed, based on analytical results, to modify the frequency of the monitoring to annually for eight wells in the former thinner spill area (Hartnett 2000b, Benjamin 2000).

As part of the Supplemental RI, the NYSDEC requested that the eastern extent of the ground water plume (beneath the building) be evaluated. A total of four piezometers (OBG-PZ-1, OBG-PZ-2, OBG-PZ-3 and OBG-PZ-7) were installed and sampled for VOCs (including chlorinated VOCs) using USEPA Method 8021. Piezometers OBG-PZ-1 and OBG-PZ-2 were subsequently abandoned as they contained elevated levels of BTEX and were within the plume. OBG-PZ-3 and OBG-PZ-7 serve to define the eastern extent of the plume.

Two sets of ground water samples from the former thinner tanks area are discussed in this report as requested by the NYSDEC (Benjamin 1999). The first set of samples were collected in July 1999, and the second set of samples was collected in November 1999. In general, xylene has contributed to greater than 75% of the total BTEX concentrations in these wells. The total BTEX concentrations are presented below:

Total BTEX Concentrations

Location	July 1999	November 1999
T-1	ND	9

Total BTEX Concentrations

Location	July 1999	November 1999
T-2	32,000	178,800
T-3	53,100	32,100
T-4	60,000	64,800
T-5	Dry	420
T-10	336	ND
T-13	410	230
T-15	35,300	9,400
T-18	Dry	Dry
T-21	239,000	192,400 (LNAPL noted)
T-24	ND	3
T-26	21	10
T-29	ND	ND
OBG-PZ-1	1,500	Abandoned
OBG-PZ-2	25,500	Abandoned
OBG-PZ-3	ND	NS
OBG-PZ-7	ND	NS

Notes:
Concentration in μg/L
ND - not detected
NS - not sampled
Source: O'Brien & Gere Engineers, Inc.

The ground water chemistry data and the lateral extent of the plume is illustrated on Figure 3-13. Consistent with previous data, the highest concentrations of BTEX were detected in wells T-2, T-3, and T-4 located near the former thinner tanks, well T-15 located adjacent to the building, and well T-21, where light non-aqueous phase liquid (LNAPL) was observed. Well T-21 is located adjacent to the abandoned storm sewer and fire protection line. Lower concentrations were detected in wells radially away from the former thinner tank area, T-21 and T-15 areas.

As illustrated on Figure 3-13, the lateral extent of the BTEX plume is limited to the east by OBG-PZ-3 and OBG-PZ-7, where no BTEX was detected, to the west by wells T-6 and T-7, and to the south by well T-1 where 9 µg/L of BTEX was detected. Wells T-6 and T-7 were not sampled as part of the July or November sampling events; however, historical data indicates no BTEX compounds have been detected in the area.

At the downgradient property line, approximately 500 ft north of the Thinner Spill Area along Factory Avenue, monitoring wells W-6S, W-6D, OBG-7S, OBG-7D, OBG-8S, OBG-8D, OBG-9S and OBG-9D did not contain BTEX. The data indicate that BTEX is not migrating off-site.

Site wide VOCs
A total of 55 ground water samples were analyzed for chlorinated hydrocarbons using USEPA Method 8021. This section discusses ground water chemistry for both the shallow and deep ground water zones. The primary compound detected was TCE with lower concentrations of cis-1,2-DCE, trans-1,2-DCE and vinyl chloride. Xylene was only detected once at an upgradient location, with the exception of the detections in the former thinner tank area, previously discussed.

Shallow ground water zone - This zone is present across the site and includes the upper 15 ft of saturated thickness. This discussion describes the ground water chemistry from the southern portion of the site to the northern portion of the site, which is consistent with the ground water flow direction.

Due to the size of the property three upgradient wells were installed at two locations. The sample collected from upgradient monitoring well OBG-11, in the southwest property area did not contain any VOCs. Upgradient monitoring wells U-1S and U-1D, were installed in the southeast property area at the miscellaneous storage area. Xylene was detected at U-1S at 31 µg/L, which is above the NYS Class GA standard. The extent of the xylene contamination in this area of the site is limited as xylene was not detected in any other on-site wells, other than in the former thinner tanks area.

Monitoring wells OBG-12 and OBG-13 were installed adjacent to the southern side of the manufacturing building and downgradient of the IWT plant area. No VOCs were detected in either well which suggests that the IWT plant area is not a source of VOCs to the ground water. Monitoring well OBG-15, located in southwest property area immediately adjacent to the manufacturing building and downgradient of the former container storage pad, and former tank farm building (mold storage building) contained 277 µg/L of total VOCs, primarily TCE. The information suggests that the mold storage building may be a source of VOCs. Monitoring well WT-3R, located in the southeast portion of the site near the building, contained 22 µg/L of total VOCs. The source of VOCs at WT-3R is undocumented.

Continuing north, monitoring wells MWI-1 and MWI-2 were installed in the southern portion of the manufacturing building. At MWI-1 the only VOC detected was vinyl chloride at 6 µg/L and at MWI-2 the total VOC concentration was 60 µg/L.

Monitoring well MWI-3 installed in the northern portion of the manufacturing building contained 29,940 µg/L of total VOCs. Trichloroethene was detected at 25,000 µg/L, and its associated breakdown products including cis-1,2-DCE and vinyl chloride were detected at 4800 µg/L and 140 µg/L, respectively. The likely source of VOCs detected at MWI-3 is near the paint room, as evidenced by the elevated VOCs, PID readings, and reported odors at soil borings BH-47, BH-49, and BH-9.

In the northwest corner of the manufacturing building (1975 addition) piezometers OBG-PZ-1, OBG-PZ-2, OBG-PZ-3, and OBG-PZ-7 were installed to evaluate the eastern extent of the thinner spill area as previously described. Total chlorinated VOCs were detected at OBG-PZ-2 and OBG-PZ-3 at 42 µg/L and 17 µg/L, respectively. The source of the chlorinated VOCs in this area is either the paint room area or closed surface impoundment #1, which extends under this portion of the manufacturing building.

VOCs were detected in only three wells sampled from wells installed north of the manufacturing building including the northern property area and northwest property area. The detections were noted at OBG-10S, MW-2S and W-11S which indicate that VOCs in the shallow zone are limited to the northern side of the manufacturing building and administration building. The total VOCs at OBG-10S was 15 µg/L, and the total VOC concentration at MW-2S was 2 µg/L. The highest concentration of total VOCs in the shallow ground water was 437 µg/L at well W-11S. The concentration at W-11S is consistent with the presence of VOCs in the soil at OBG-TB-36 and OBG-TB-37, which contained 1,500 µg/Kg and 809 µg//Kg of total VOCs, respectively.

No VOCs were detected at MW-1S, MW-3S, MW-4S and MW-5S located around closed surface impoundments #1 and #2. This data, in conjunction with the low concentration detected at MW-2S (2 µg/L of total VOCs), indicate that the former surface impoundments are not a source of VOCs.

Along the northern property boundary, adjacent to Factory Avenue, no VOCs were detected in the shallow ground water zone which indicate that no VOCs are migrating off-site in the shallow ground water zone.

At the Ley Creek PCB Dredgings site, the only VOC detected was methylene chloride which is not consistent with ground water chemistry at the site.

Deep Ground Water Zone
As discussed in Section 3.1.3, the increasing depth of the glacial till layer near the northern portion of the manufacturing building results in both shallow and deep ground water zones in the north portion of the site. The deep ground water zone extends to Ley Creek.

The geologic cross -section presented as Figures 3-2 indicates the shallow and deep ground water zones are separated by a zone with higher clay content. This zone likely limits the downward vertical migration of VOCs in the north of the manufacturing building and northern property area.

Review of ground water data for wells in the deep zone indicates TCE was the primary VOC detected, with lesser amounts of cis-1,2-DCE and vinyl chloride. The total VOC concentration in this zone ranges from 12 µg/L at OBG-7D to 181,000 µg/L at OBG-10D.

A ground water iso-concentration map of the total VOC concentrations in the deep zone is presented as Figure 3-14. As illustrated on Figure 3-14, the axis of the plume trends southwest to northeast from monitoring well OBG-10D, which contained 181,000 µg/L of total VOCs, and monitoring well OBG-6D at the downgradient property boundary that contained 68,400 µg/L of total VOCs.

Monitoring wells MW-3D, MW-4D, and MW-5D are located approximately 350 ft west of OBG-6D, at former surface impoundment #2. The total VOC concentrations at these wells ranged from 17,000 to 37,000 µg/L. The compounds detected are primarily TCE and cis-1,2-DCE which are consistent with the compounds detected at OBG-10D and OBG-6D, suggesting a similar source.

Since no significant concentrations of VOCs were detected in the shallow ground water zone, it can be concluded that the source of VOCs to the deep ground water zone is from the manufacturing building, likely near MWI-3 and near soil borings BH-47, B-49 and B-9. The VOCs likely migrate vertically downward from the manufacturing building and migrate within the lenses of the deeper glaciolacustrine unit. The deeper silt and fine sand layer reflects the topography of the till layer which slopes to the northeast toward OBG-6D.

Field screening information indicates that no significant PID readings, odors or visual evidence of VOCs (via UV field screening) were noted during well installation at OBG-10D or OBG-6D. In addition, no odors or DNAPL were noted during ground water sampling. This further suggests that VOC migration is limited to small lenses.

The southern extent of the VOC plume is appears to be in the area of BH-49, BH-47 and B-9. The northeastern and eastern extent along the axis of the plume is not defined, as the total VOCs at OBG-6D was 68,400 µg/L and no deep wells exist east of OBG-6D.

Total VOC concentrations in monitoring wells located west of OBG-6D are significantly lower, ranging from 12 µg/L to 3,250 µg/L. Specifically, monitoring well OBG-7D, located approximately 400 ft west of well OBG-6D, contained only 12 µg/L of total VOCs which suggests the well is located near the western extent of the VOC plume originating from the manufacturing building. Further to the west, the total VOC concentrations increased to 3,250 µg/L at OBG-8D. At OBG-9D, the total VOC concentration decreased to 253 µg/L and at well W-6D, located furthest west, the total VOC concentration was 20 µg/L. The compounds detected at each of these wells are consistent with the compounds detected at OBG-10D and OBG-6D.

The presence of DNAPL was evaluated in monitoring wells MW-3D, MW-4D, OBG-6D, OBG-7D, and OBG-8D. Based on filed visual inspection, no DNAPL was present in these wells.

3.3.2. Semivolatile organic compounds

Each of the wells sampled between August and November 1999 were analyzed for SVOCs. The only SVOCs detected were bis (2-ethylhexyl) phthalate, diethylphthalate and 2,4-dimethylphenol.

The phthalate compounds detected are plasticizers and are common laboratory or sampling artifacts. Bis(2-ethylhexyl) phthalate was detected in upgradient monitoring well U-1D at 230 µg/L which is above the NYS Class GA standard of 5 µg/L. The source of the bis(2-ethylhexyl) phthalate may be related to past site activities; however the absence of this compound in shallow well U-1S suggests that its presence at U-1D is due to sampling or laboratory artifacts. This compound was also detected at monitoring well OBG-13 at a concentration below the NYS Class GA standard.

Diethylphthalate was detected at OBG-9D at a concentration of 20 µg/L, which is below the NYS Class GA standard of 50 µg/L.

The compound 2,4-dimethylphenol was detected at monitoring well OBG-9S at a concentration of 4 µg/L, which is slightly above the ground water standard of 1 µg/L. In summary, the data indicate that no significant concentrations of SVOCs were detected in the ground water.

3.3.3. Polychlorinated biphenyls

Low concentrations of PCBs were detected in 19 of the 42 wells sampled. The low concentrations detected are consistent with the low solubility of PCBs. As a result of the low solubility, PCBs tend to adsorb onto soil. As reported in literature, small quantities of PCBs (low µg/L level) will dissolve in ground water; however, these dissolved compounds readily re-adsorb to soil; therefore, the dissolved PCBs do not readily migrate large distances (Andrews 1990).

Data for the site indicate that PCBs were predominantly detected in the shallow ground water zone as compared to the deep ground water zone. Specifically, 16 of the 27 shallow wells sampled contained Aroclors and the concentrations at 13 of these wells exceed NYS Class GA standards. Conversely, in the deep zone Aroclors were only detected in three of the 15 wells sampled, at concentrations that exceed the NYS Class GA standard. The Aroclor concentrations are illustrated on Figure 3-12 and are summarized on Table 3-14.

The data indicate the highest concentrations of PCBs were generally detected in source areas, as illustrated in the following table:

Highest PCB concentrations in wells

Well	Concentration (µg/L)	Potential source
MW-2S	18	Surface impoundment #1
MW-5S	9	Surface impoundment #2

Highest PCB concentrations in wells

Well	Concentration (µg/L)	Potential source
W-6S	4	On-site landfill
W-6D	3	On-site landfill
OBG-6S	2	Unknown
OBG-9S	3	Swale
OBG-9D	2	Swale
MWI-2	5	Oil/water collection sump #5 line.

Source: O'Brien & Gere Engineers, Inc.

As described in Section 3.2, subsurface soil samples collected in the on-site landfill, swale, and oil/water collection sump 5 areas showed PCB concentrations greater than screening levels. Given that most of these detections were associated with locations where PCBs were observed in subsurface soils, the detections are likely indicative of localized conditions. The concentrations in the remaining wells ranged from 0.07 µg/L to 0.9 µg/L.

In summary, samples collected from 16 of the 42 wells contained PCBs at concentrations above NYS Class GA standards for PCBs. The highest concentrations of PCBs were detected in the vicinity of surface impoundment #2, the historic landfill, former drainage swale and the oil/water collection sump 5 line. Concentrations at wells away from theses areas were between 0.07 and 0.9 µg/L.

3.3.4. Metals

No metals were detected above standards in the 42 wells sampled. The data indicate that the facility is not a source of metals to the ground water.

3.4. Storm water

Data generated during the storm water sampling events described in Section 2, are summarized in this section. A tabular summary of the storm sewer sampling data which is described below is presented as Table 3-16. Analytical data are included in Exhibit E of the 1997 Preliminary RI/FS Report.

3.4.1. Main storm sewer system

Sampling associated with the main storm sewer system leading to Outfall 003 has been performed during the 1985 Hydrogeological Investigation, the 1987 and 1989 storm sewer sampling studies, the 1992 Ley Creek PCB Dredgings site RI, and SPDES discharge monitoring. In 1985, EDI collected four samples from storm sewers located south of the facility buildings. Constituents detected included PCE at 1 µg/L, antimony at 160 µg/L, and lead at 40 µg/L in S-1; arsenic at 3.6 µg/L in S-2; chromium ranging from 20 to 50 µg/L in S-1, S-3, and S-4; zinc at 120 µg/L at S-2 and 100 µg/L at S-3; copper at 40 µg/L at S-1 and 90 µg/L at S-4; and selenium at 9.6 µg/L at S-2 and 2.0 µg/L at S-3. Constituents detected in manholes S-1 and S-3 are likely related to off-site contributions. Manholes S-2 and S-4 receive facility runoff.

Sampling associated with the main storm sewer system tributary to Outfall 003 was also performed in 1987 and 1989 by O'Brien & Gere. The 1987 sampling program assessed the relationship between rain events and concentrations of certain constituents in the facility's storm water discharge to Ley Creek. Constituents detected within the storm water during one or more of the sampling events included PCB Aroclor 1248, VOCs (TCE and 1,2-DCE), metals (lead, copper and zinc) and phthalates. The results indicated a definite first-flush pattern to storm water pollutant loadings upon the beginning of rain events.

In 1989, a sampling program was performed to identify potential sources of PCBs within the then-recently modified storm sewer system and further investigate the presence of TCE within the same sewers. Sampling was performed within a series of manholes and collection sumps located on the southwest corner of the manufacturing building and the manhole just upstream of Outfall 003. The results of these sampling events indicated the presence of PCB Aroclor 1248, with the greatest concentrations originating from the western branch of the storm sewer system tributary to Outfall 003. PCB concentrations in manholes A9, A10, A11, and A12 ranged from 3.0 to 4.2 µg/L. TCE was also detected during this project in the sewers located on the western side of the facility. The highest concentration existed downgradient of the mold storage building in manhole A6 at 1,500 µg/L.

Overall, the following conclusions were drawn from the 1989 sampling:

- Collected data do not rule out a potential source of PCBs to the storm sewer system on the southwestern corner of the facility.

- Little or no PCBs were originating from off of the facility.

- Some PCBs were contributed by the section of storm sewer serving the middle of the facility.

- There were no influxes of PCBs into the new sections of storm sewer along the west side of the manufacturing building.

- The source of the TCE within the storm sewers was generally located on the west side of the manufacturing building.

During the 1992 Ley Creek PCB Dredgings site RI sampling, PCB Aroclor 1248 was detected in Outfall 003 discharge water samples taken during the first two sampling times, 2:30 p.m. and 3:00 p.m.; PCBs were not detected in outfall discharge water samples collected at 3:30 p.m. and 4:30 p.m. PCB Aroclor 1248 concentrations in the sample and blind duplicate sample collected at 2:30 p.m. were 1.2 µg/L and 1.8 µg/L. The PCB Aroclor 1248 concentration in the sample collected ½ hr later was 1.8 µg/L. These concentrations did not exceed the 4 µg/L effluent limit for PCB Aroclor 1248 which was established pursuant to the 1985 SPDES Consent Order. PCB Aroclor 1248 was detected in sediment sample collected from the outfall pipe at a concentration of 0.18 mg/kg. These data are summarized in Table 3-17.

Monitoring of the discharge through Outfall 003 has been routinely performed under SPDES. Until September 25, 1997, the effective date of the new SPDES permit, the discharge was sampled monthly and analyzed for a variety of parameters, including PCBs and TCE. These constituents were routinely detected in the monthly monitoring. Between 1994 and 2000, TCE has been detected consistently below its discharge limit (prior to the September 25, 1997 permit) of 160 µg/L. TCE concentrations have ranged from less than detectable to 53 µg/L since January 1994, as depicted in Appendix E and on Figure 3-15. The September 25, 1997 SPDES permit contains a final action level for TCE of 5 µg/L for Outfall 003, to be effective three years from the effective date of the Order and SPDES permit.

PCB Aroclors 1242 and 1248 concentrations have ranged from less than detectable to 1 µg/L and less than detectable to 24 µg/L, respectively, between January 1994 and March 2000, as depicted in Appendix E and Figure 3-16. The September 25, 1997 SPDES permit contains interim discharge limitations of 2 µg/L per Aroclor, and final discharge limitations of 0.3 µg/L per Aroclor, with a discharge goal of non-detect at the higher of 0.065 µg/L or the site-specific method detection limit. As shown on Figure 3-16, Aroclor 1248 exceeded the interim discharge limit in September and October 1999. With this exception, the interim discharge limit for PCBs has not been exceeded since January 1994. The Order requires that the Outfall 003 discharge meet final discharge limitations within the shortest reasonable time period, which shall not exceed three years from the effective date of the Order.

Total xylenes have periodically been present in this outfall as well, at concentrations up to 16.7 µg/L in December 1996. The source of the xylenes is likely impacted ground water from the former thinner tanks area on the west side of the facility, which potentially seeps into the storm sewer system. The Order contains an interim action level of 100 µg/L for xylenes. The September 25, 1997 SPDES permit contains a final action level for total xylenes of 5ug/L for Outfall 003, to become effective three years from the effective date of the Order and the SPDES permit.

Outfall 003 sampling performed twice per week in August 1996 indicated flows ranging from 15,249 to 28,800 gal/day, PCB Aroclor 1248 concentrations ranging from 0.16 to 0.39 µg/L, and TCE concentrations ranging from 5.1 to 15 µg/L. Coal pile runoff sampling, also performed twice per week in August 1996, indicated pHs ranging from 6 to 8.6, TSS concentrations ranging from less than 1,000 to 8,000 µg/L, and total dissolved solids (TDS) concentrations ranging from 446 to 583 µg/L. Coal pile runoff was redirected to Outfall 003 in accordance with the September 25, 1997 SPDES permit, since the coal pile was removed in 1996.

Following the 1996 sampling, routine monitoring has been performed under the September 25, 1997 SPDES permit. In November 1999, modifications to the SPDES permit monitoring requirements were proposed based on monitoring frequencies and patterns of non-detections. These modifications are described in Section 2.3.

As summarized in Table 3-16, historically, the highest concentrations of TCE were detected at sample location A6, in the vicinity of the mold storage building. The highest concentrations of PCBs were detected at sample location A1, located in the vicinity of Outfall 003. These sample locations are depicted on Figure 1-8. As depicted in Appendix E, concentrations of TCE and PCBs in Outfall 003 have been detected below the previous SPDES Consent Order effluent limits, but above the September 25, 1997 SPDES permit action level for TCE and final effluent limits for PCBs. As depicted in Figure 3-15, TCE has always been detected below the interim effluent limits. As indicated in Figure 3-16, PCBs have generally been detected below the interim limits, with the exception of samples collected in September and October 1999. Both TCE and PCBs have been sporadically detected at concentrations above the final limits which will be effective in September 2000. A sewer televising IRM is planned to evaluate the integrity of the storm sewer leading to Outfall 003, the oil/water collection sumps in the manufacturing building, and their associated piping. Cleaning of the sumps and sewer lines to facilitate televising will also be conducted as part of this IRM. The IRM is being implemented to gain a better understanding of potential sources of contamination such as potential ground water infiltration and/or residues in the storm sewers, and will be used to evaluate actions, if any, to be taken in order to meet the final effluent limits for Outfall 003.

Recent (April 1998 through February 2000) results for PCBs and TCE in Outfall 003 are illustrated in Figures 3-15 and 3-16. Historical PCB and TCE data collected from Outfall 003 are included in Appendix E. These constituents are illustrated due to routine detections in monthly monitoring.

3.4.2. Eastern storm sewer system

Sampling associated with the eastern storm sewer system leading to Outfall 004 was performed during the 1987 storm outfall assessment, during 1996 and during the SPDES monitoring program. The 1987 sampling was intended to assess the relationship between rain events and concentrations of certain constituents in the facility's storm water discharge. Constituents detected include PCB Aroclor 1248, lead, copper, zinc, cyanide (one sample event only), cis-1,2-DCE (one sample event only), PCE (one sample event only, at the upstream sample point), naphthalene and phthalates.

In 1992, the Outfall 004 sewer line was inspected for integrity using sewer televising. The 1992 televising program indicated that the Outfall 004 sewer line was not subject to significant ground water infiltration. Sewer television inspection logs are presented in Exhibit K of the 1997 Preliminary RI/FS Report.

In November 1995 and April 1996, additional sampling of Outfall 004 and portions of the associated storm sewer system was performed. This sampling was undertaken in addition to the routine SPDES sampling. The sampling focused on investigating the source of the detection of PCBs in the outfall. One round of sampling was performed to assess the concentrations of PCBs in the storm sewer as it entered the GM property on the southeastern corner, and concentrations at the outfall. The results of this sampling indicated low concentrations of PCBs present at the outfall (0.2 μg/L), but not within the upstream portion of the storm sewer. Further sampling performed at the outfall and several upstream manholes indicated less than detectable concentrations at the outfall and the upstream manholes. August 1996 sampling performed twice per week at Outfall 004 indicated less than detectable PCBs for each sampling event.

Following the 1996 sampling, routine monitoring was performed under the September 25, 1997 SPDES permit. In November 1999, modifications to the SPDES permit monitoring requirements were proposed based on monitoring frequencies and patterns of non-detections. These modifications are described in Section 2.3.

Based on the results of the previous investigations and the SPDES monitoring conducted to date, PCBs are infrequently present in the Outfall 004 discharge. Manhole sampling to date has not indicated the source of detections of PCBs in the Outfall 004 discharge. Based on results of monitoring performed under the September 25, 1998 SPDES permit, PCBs are infrequently detected except for samples obtained between January and March 1999.

3.5. Ley Creek

Data generated during the Ley Creek sampling events, described in Section 2, are summarized in this section. As discussed in Section 2, in order to provide the most current but complete environmental conditions for surface water and sediment, analytical data resulting from the 1996 NYSDEC sampling event and the 1998/1999 sampling events associated with the Supplemental RI are included in this report. Historical data are presented in the 1997 Preliminary RI/FS Report. Tabular summaries of the sediment, surface water, and fish sampling data, which are described below, are presented in Tables 3-18 through 3-38. Analytical data, collected in 1998/1999, are included in Exhibit E. Analytical data generated prior to 1998 is included in Exhibit E of the 1997 Preliminary RI/FS Report.

3.5.1. Surface water sampling and analysis

1996 NYSDEC Sampling - Analytical data for detected VOC, SVOC and inorganic constituents in the two surface water samples collected in the south branch of Ley Creek, downstream of Outfall 003 and 004, are presented in Tables 3-18, 3-19 and 3-20. PCBs were not detected in these samples. Detected organic constituents include 1,2-DCE (1 and 2 µg/L) and bis(2-

ethylhexyl)phthalate (1 µg/L). The bis(2-ethylhexyl)phthalate detection exceeded the NYS Class B surface water standard of 0.6 µg/L. Inorganic constituents detected at concentrations above the NYS Class B surface water standard include aluminum, iron, silver, and zinc.

1998/1999 O'Brien & Gere Supplemental RI Sampling. Analytical data generated from the Ley Creek surface water sampling and analysis performed during O'Brien & Gere' 1998 and 1999 sampling events are presented in Tables 3-26 through 3-29. The 1998 surface water sampling event was conducted during low flow conditions; the 1999 surface water sampling event was conducted during high flow conditions. Sampling locations are shown on Figure 2-8 and described on Table 2-6.

Five VOC constituents were detected in the surface water samples collected and analyzed using EPA Method 8260. Acetone was detected in three upstream samples ranging from 1 J µg/L to 3 J µg/L. Methylene chloride was detected in two upstream samples ranging from 0.4 J µg/L to 2 J µg/L. TCE was detected in three downstream samples at 1 J µg/L. TCE was detected in four downstream samples ranging from 1 J µg/L to 12 µg/L. Vinyl chloride was detected in two samples (one upstream and one downstream) ranging from 0.1 J µg/L to 0.2 J µg/L. Cis-1,2-DCE was detected in four downstream samples ranging from 0.9 J µg/L to 2 J µg/L. Cis-1,2-DCE was detected in four upstream samples ranging from 1 J µg/L to 5 J µg/L. TCE was detected at 5 µg/L and cis-1,2-DCE at 4 µg/L in the upstream sample analyzed for TCL VOCs using EPA Method 8021. Detected concentrations are depicted on Figure 3-18.

One SVOC (Di-n-octyl phthalate) was detected in three downstream samples and four upstream samples collected during the 1998 low flow sampling event at 10 J µg/L. SVOCs were not detected in the samples collected during the 1999 high flow sampling event. Detected concentrations are depicted on Figure 3-18.

PCBs were not detected in the samples collected during the 1998 low flow sampling event. PCB Aroclor 1248 was tentatively identified in one downstream sample collected during the 1999 high flow sampling event at 0.04 NJ µg/L. The detected concentrations are depicted on Figure 3-18.

Heavy metals and cyanide detected during the high and low flow sampling events include antimony (0.0015 J µg/L to 0.0024 J µg/L), chromium (0.0059 J µg/L to 0.0080 J µg/L), copper (0.0016 J µg/L to 0.0087 J µg/L), lead (0.0014 J µg/L to 0.0045 J µg/L), nickel (0.0010 J µg/L to 0.013 J µg/L), zinc (0.0112 µg/L to 0.0339 µg/L), and cyanide (0.011 µg/L). Detectable concentrations of aluminum, barium, beryllium, calcium, iron, magnesium, manganese, potassium, and sodium were identified in the two samples analyzed for TAL metals. Detected concentrations are depicted on Figure 3-18.

NYS Class B Ground Water Quality Standards for VOCs, SVOCs, and PCBs were not exceeded for any of the surface water samples; Aluminum and iron were the only metals detected in surface water above the NYS Class B surface water standards. Cyanide concentrations also exceeded NYS Class B surface water quality standards at sample location SW-6 during the high flow sampling event.

3.5.2. Sediment sampling and analysis

1996 NYSDEC Sampling - Analytical sediment data for detected PCB, VOC, SVOC, and inorganic constituents and TOC are presented in Tables 3-21 through 3-25. Concentration ranges of these parameters were as follows:

Table 3-39. *1996 NYSDEC sediment organic concentration ranges.*

Organic Constituent Concentration Range (mg/kg)	North Branch	Sanders Creek	South Branch	Upper Main Branch[1]	Lower Main Branch[2]
Total PCBs	LTD	LTD to 0.016	0.025 to 4.816	0.039 to 1.606	0.122 to 27.820
Total VOCs	0.007 to 0.076	0.006 to 0.033	0.006 to 0.06	0.002 to 0.030	0.004 to 0.4
Total SVOCs	0.213 to 1.89	LTD to 0.041	1.332 to 252.220	0.666 to 34.990	LTD to 54.110
TOC	15100	not sampled	28700	32000	84500

Notes:
1 Confluence of north and south branches of Ley Creek to Rt. 11
2 Rt. 11 to Onondaga Lake
LTD - less than detectable

Source: O'Brien & Gere Engineers, Inc.

Detected Aroclors in the south, upper main (from confluence of north and south branches to Rt. 11), and lower main (Rt. 11 to Onondaga Lake) branches of Ley Creek include 1016, 1242, 1254, and 1260. Total VOC and SVOC concentrations do not include tentatively identified compounds (TICs). Detected VOC constituents included both chlorinated and aromatic organics, and detected SVOC constituents were predominantly PAHs. The highest total PCB and VOC concentration ranges were observed in the lower main branch of Ley Creek. The highest SVOC concentrations were observed in the south branch of Ley Creek.

Inorganic concentration ranges were as follows:

Table 3-40. *1996 NYSDEC sediment inorganic concentration ranges.*

Inorganic Constituent Concentration Range (mg/kg)	North Branch	Sanders Creek	South Branch	Upper Main Branch[1]	Lower Main Branch[2]
Aluminum	3070 to 3700	7130 to 13200	3530 to 25900	2820 to 10300	2160 to 1040
Antimony	LTD to 0.77	LTD	LTD to 18.7	LTD	LTD to 3.5
Arsenic	2.9 to 13.5	14.1 to 19.1	3.6 to 10.3	1.1 to 7.6	LTD to 11.1
Barium	18.2 to 36.7	29.1 to 133	76.5 to 316	11.2 to 70.7	59.7 to 137
Beryllium	0.16 to 0.3	0.44 to 0.87	0.24 to 1.2	0.19 to 0.53	0.14 to 0.51
Cadmium	0.15 to 0.26	LTD	0.11 to 5.9	0.25 to 1.1	0.08 to 5.7
Calcium	17500 to 50100	62600 to 69000	23000 to 193000	11200 to 105000	8100 to 231000
Chromium	6.5 to 7.9	14.2 to 21.7	13.1 to 42.2	6.6 to 30	3.3 to 146
Cobalt	4.2 to 4.7	12.5 to 14.3	3.8 to 15.8	3 to 8.2	1.4 to 9.4
Copper	9.7 to 14.4	20.6 to 25.6	28.8 to 423	9.2 to 50.3	3.1 to 128

Table 3-40. *1996 NYSDEC sediment inorganic concentration ranges.*

Inorganic Constituent Concentration Range (mg/kg)	North Branch	Sanders Creek	South Branch	Upper Main Branch[1]	Lower Main Branch[2]
Iron	11900 to 16400	15900 to 34600	10100 to 36100	7920 to 18700	5860 to 23000
Lead	6.5 to 57.7	5.2 to 15.8	11.1 to 1170	6.9 to 67.1	0.94 to 128
Magnesium	4700 to 16900	22300 to 26500	4160 to 19100	5100 to 23600	4560 to 14800
Manganese	121 to 341	368 to 414	254 to 882	151 to 401	169 to 428
Mercury	LTD	LTD	0.08 to 0.19	LTD to 0.11	LTD to 0.2
Nickel	6.2 to 8.2	17.3 to 33.8	14.8 to 38.6	5.9 to 18	3.8 to 54.1
Potassium	693 to 1130	2670 to 3900	599 to 8430	673 to 2810	495 to 2130
Selenium	LTD	LTD	LTD to 2.2	LTD	LTD to 0.66
Silver	0.19 to 0.31	0.21 to 0.38	0.13 to 4.3	LTD to 1.3	LTD to 1.7
Sodium	128 to 322	381 to 549	233 to 1000	152 to 404	227 to 4160
Thallium	LTD to 0.57	LTD to 0.88	LTD to 0.73	LTD to 0.6	LTD to 1
Vanadium	8.2 to 11.4	17 to 25.3	12.6 to 50.3	7.9 to 24.5	3.9 to 25
Zinc	40.9 to 54.4	39.2 to 77.4	78.7 to 811	38.6 to 172	12.5 to 314
Cyanide	LTD	LTD	LTD	LTD	LTD to 1.6

Table 3-40. *1996 NYSDEC sediment inorganic concentration ranges.*

Inorganic Constituent Concentration Range (mg/kg)	North Branch	Sanders Creek	South Branch	Upper Main Branch[1]	Lower Main Branch[2]

Notes:
1 Confluence of north and south branches of Ley Creek to Rt. 11
2 Rt. 11 to Onondaga Lake
LTD - less than detectable

Source: O'Brien & Gere Engineers, Inc.

Additional data received from NYSDEC related to sediment in Ley Creek indicate that PCB concentrations in sediment in the vicinity of the site were generally lower than those in the south branch of Ley Creek (upstream). PCB concentrations in sediment in the vicinity of the site were generally higher than those in the north branch of Ley Creek and in Sanders Creek (upstream). VOC concentrations in sediment in the vicinity of the site were generally lower than the upstream and downstream portions of the creek. SVOC concentrations in sediment in the vicinity of the site were generally lower than the south branch of Ley Creek (upstream) or the lower main branch of Ley Creek between Rt. 11 and Onondaga Lake (downstream). SVOC concentrations in sediment in the vicinity of the site were generally higher than those in the north branch of Ley Creek and in Sanders Creek (upstream). Inorganic concentrations in sediment in the vicinity of the site were generally lower than the upstream and downstream portions of the creek.

1998/1999 O'Brien & Gere Supplemental RI Sampling. Analytical data generated from the Ley Creek sediment sampling and analysis performed during O'Brien & Gere' 1998 sampling event are presented in Tables 3-30 through 3-36. Sampling locations are shown on Figure 2-8.

VOCs were detected in seven of the twenty-six surface sediment samples collected (five upstream and two downstream) and in two of the five sub-surface sediment samples collected (one upstream and one downstream). The detected VOCs were predominantly located in the upstream portion of the creek. Detected VOCs (EPA Method 8021) at the following ranges included benzene (2 J μg/kg), chloroform (2 J μg/kg), methylene chloride (65 J μg/kg to 360 J μg/kg), ethylbenzene (2 NJ μg/kg to 3 NJ μg/kg), toluene (2 NJ μg/kg to 16 NJ μg/kg), TCE (3 μg/kg to 38 J μg/kg), xylene (total) (5 J μg/kg to 10 NJ μg/kg), and cis-1,2-DCE (2 J μg/kg). Detected TCL VOCs (EPA Method 8260) and ranges included MEK (5 J μg/kg to 6 J μg/kg) and acetone (15 J μg/kg to 21 J μg/kg). Detected concentrations above screening levels are depicted on Figure 3-17.

SVOCs were detected in all of the thirty-one sediment samples collected. Detected SVOC constituents were generally polynuclear aromatic hydrocarbons (PAHs). SVOCs were detected at the following concentrations ranges: total phenols (48 J μg/kg to 602 J μg/kg), total PAHs upstream (2279 μg/kg to 805500 μg/kg) and downstream (12042 μg/kg to 407000 μg/kg), butyl benzyl phthalate (220 J μg/kg to 610 J μg/kg), carbazole (120 J μg/kg to 20000 J μg/kg), di-n-butyl phthalate (45 J μg/kg), and dibenzofuran (78 J μg/kg to 14000 μg/kg). Detected concentrations above screening levels are depicted on Figure 3-17.

PCB Aroclors 1248, 1254, and 1260 were detected in the sediment samples. The highest PCB concentrations were generally observed in the downstream sediment samples. Aroclor 1248 was detected in twenty-five of the thirty-one sediment samples (6 upstream and 19 downstream). The upstream Aroclor 1248 concentrations ranged from 0.031 mg/kg to 0.2 mg/kg. The downstream Aroclor 1248 concentrations ranged from 0.15 mg/kg to 25 mg/kg. Aroclor 1254 was detected in only one upstream sample at a concentration of 0.14 mg/kg. Aroclor 1260 was detected in twenty of the sediment samples (10 upstream and 10 downstream). The upstream Aroclor 1260 concentrations ranged from 0.025 mg/kg to 1.3 mg/kg. The downstream Aroclor 1260 concentrations ranged from 0.041 mg/kg to 0.51 mg/kg. Downstream concentrations greater than 10 mg/kg were detected in only two of the ten locations sampled (SED-1 and SED-8), and concentrations greater than 1 mg/kg were detected in five of the locations. Detected concentrations above screening levels are depicted on a 3-17.

Heavy metals were detected in the majority of sediment samples. In the upstream samples detected heavy metals and ranges included: antimony (0.18 J mg/kg to 0 .41 J mg/kg), arsenic (2 mg/kg to 13.7 mg/kg), chromium (6.9 J mg/kg to 45.6 J mg/kg), copper (6.7 mg/kg to 79.7 mg/kg), lead (2.5 mg/kg to 105 mg/kg), nickel (4.5 J mg/kg to 24 mg/kg), selenium (.34 J mg/kg to 43 J mg/kg), and zinc (35.4 mg/kg to 257 mg/kg). In the downstream samples detected heavy metals and ranges included: antimony (.17 J mg/kg to .55 J mg/kg), arsenic (2.2 mg/kg to 7 mg/kg), chromium (11.4 J mg/kg to 153 J mg/kg), copper (14.6 mg/kg to 128 mg/kg), lead (12.4 mg/kg to 172 mg/kg), nickel (6.5 J mg/kg to 57.9 mg/kg), selenium (.52 J mg/kg to 1.2 J mg/kg), and zinc (59.6 mg/kg to 390 mg/kg). Detected concentrations above screening levels are depicted on Figure 3-17.

Two sediment samples were analyzed for TAL metals. The detected constituents included: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, sodium, vanadium, and zinc. The detected concentrations ranged from 0.27 J mg/kg to 31,300 mg/kg. Detected concentrations above screening levels are depicted on Figure 3-17.

Cyanide was detected in two of the thirty-one sediment samples, one upstream and one downstream, at 1.8 mg/kg and 1.2 mg/kg, respectively. Cyanide analytical results are summarized in Table 3-33.

TOC analyses were performed on these samples. The upstream concentrations ranged from 11000 mg/kg to 42400 mg/kg. The downstream concentrations ranged from 6270 mg/kg to 67400 mg/kg. TOC results are included in Table 3-34.

Eleven out of the twelve sediment samples analyzed for chlorinated dioxin/furan analyses exhibited detectable concentrations. Chlorinated dioxins and furans were detected. The detected congeners were converted to 2,3,7,8-TCDD toxicity equivalents. The 2,3,7,8-TCDD toxicity equivalents ranged from 10.11 to 55.19 ng/kg. Detected chlorinated dioxins and furans are included in Table 3-35, and 2,3,7,8-TCDD toxicity equivalents are summarized in Table 3-36.

The majority of downstream sediment samples and eight out of thirteen upstream sediment samples exceeded the New York State Sediment Criteria for metals. Metals that exceeded criteria in downstream sediment samples include: arsenic, cadmium, chromium, lead, nickel, silver, and zinc ranging from 1.2 mg/kg to 390 mg/kg. Metals that exceeded criteria in upstream sediment samples include: arsenic, chromium, lead, nickel and zinc ranging from 8.2 mg/kg to 257 mg/kg. The majority of exceedances detected in upstream samples were found at sample locations SED-22 through SED-26.

A statistical evaluation of the 1996 and 1998 sediment performed for the ecological risk assessment indicated that the concentrations of Aroclor 1016, Aroclor 1242, and Aroclor 1248 in the portion of Ley Creek between Townline Road Bridge and the Route 11 Bridge are statistically greater than upstream levels. However, the concentrations of metals, SVOCs, and VOCs in downstream sediments are statistically equivalent in this stretch to the upstream sediments. The statistical evaluation is documented in the Problem Formulation Document for the Former IFG Facility and Ley Creek Deferred Media (O'Brien & Gere 2000d).

3.5.5. Fish

1985 EDI Ley Creek sampling program. Analytical data generated from the fish sampling and analyses in 1985 are presented in Table 3-37. Concentrations of PCB Aroclor 1248 ranged from less than the detection limit to 4.1 mg/kg; concentrations of PCB Aroclor 1254 ranged from non-detectable to 2.7 mg/kg, with total PCB concentrations ranging from less than the detection limit to 6.8 mg/kg. Concentrations of PCBs greater than the detection limit were observed only in carp (EDI 1985b).

1992 O'Brien & Gere Ley Creek Dredged Material Area RI. Data generated from analysis of fish samples collected during the RI are presented in Table 3-38. PCB concentrations in whole fish upstream ranged from less than detectable to 0.86 mg/kg, identified as PCB Aroclor 1248, on a wet weight basis. PCB concentrations in the edible portions of upstream pumpkinseeds ranged from 0.11 mg/kg to 2.4 mg/kg, identified as PCB Aroclor 1248, on a wet weight basis. The lipid percentages in the upstream fish samples were 0.1%, with the exception of 0.5% in the golden shiner. Moisture percentage was not measured for upstream fish samples due to insufficient sample quantity.

PCB Aroclor 1248 concentrations in whole fish collected from the outfall sampling location ranged from 0.19 mg/kg to 0.82 mg/kg on a wet weight basis. PCB Aroclor 1260 was detected in one of the whole fish from the outfall location, a white sucker, at 0.23 mg/kg. Lipid percentages ranged from 0.1% to 0.5% in the outfall fish samples. Moisture percentage was measured for one of the outfall fish samples, a golden shiner, at 79.7%.

PCB Aroclor 1248 concentrations in whole fish downstream ranged from 0.46 mg/kg to 1.1 mg/kg on a wet weight basis. PCB Aroclor 1260 concentrations in whole fish downstream ranged from less than detectable to 0.35 mg/kg on a wet weight basis. PCB Aroclor 1248 concentrations in filet and edible portion fish samples downstream ranged from 0.11 mg/kg to 0.32 mg/kg wet weight; PCB Aroclor 1260 was not detected in downstream filet or edible portion fish samples. The lipid percentages in the downstream fish samples ranged from 0.1% to 3.0%, and moisture percentages for the four samples in which it was measured ranged from 72.6 to 77.8%.

Carp and shiners are species which were analyzed on a whole fish basis in both 1985 and 1992. Data indicate lower concentrations of PCB Aroclor 1248 in fish in 1992 than observed in 1985. PCB Aroclor 1248 concentrations ranged from less than 0.3 mg/kg to 4.1 mg/kg in carp collected in 1985; concentrations of PCB Aroclor 1248 in whole carp collected in 1992 were 0.47 mg/kg and 1.1 mg/kg. PCB Aroclor 1254 was not detected in whole carp collected in 1992, but was detected in three of the four carp collected in 1985 at concentrations of 0.53 mg/kg, 1.2 mg/kg, and 2.7 mg/kg. PCB Aroclor 1260 was detected in whole carp collected in 1992 at concentrations of 0.35 mg/kg and 0.7 mg/kg, but was not detected in carp collected in 1985.

The fish species observed in Ley Creek are stream dwellers which tend to migrate up and down the stream for up to several miles in response to water level fluctuations, habitat quality, and food availability (Creech 1992). Comparisons of fish from upstream, outfall, and downstream sampling locations could not be made due to the tendency of the fish collected to migrate for several miles (Creech 1992). Potential PCB transport pathways to Ley Creek in the study area (outfall discharge, ground water discharge, and surface runoff) likely contribute PCBs to fish; quantitative conclusions could not, however, be drawn related to the proportionate contribution by these pathways versus possible non-study area related sources to PCBs in fish. Because potential PCB transport pathways to Ley Creek are not fully related to the dredged material, quantitative conclusions could also not be drawn related to the contribution of the dredged material itself to PCBs in fish (O'Brien & Gere 1993).

Based on the results of the previous investigations, PCBs were present in fish collected in the vicinity of the Ley Creek PCB Dredgings site. Quantitative conclusions could not be drawn related to the proportionate contribution by the Ley Creek PCB Dredgings site to PCBs in fish due to the tendency of the fish collected to migrate for several miles. Aroclors other than those associated with GM's outfall discharge were detected in fish.

4. Remedial and decommissioning activities

GM has conducted several remedial and facility decommissioning efforts at the facility, which are discussed in this section. Remedial efforts included installation and operation of an oil/water collection system, storm sewer restoration, installation and operation of a ground water recovery system in the former thinner tanks area, surface impoundment closure, and soil excavation/disposal in the area of the Ley Creek Relief Interceptor sewer. GM has also performed facility decommissioning activities since the facility ceased manufacturing operations in 1993.

4.1. Remedial activities

The various remedial programs which have already been implemented at the facility are discussed in the following subsections. These remedial programs were generally performed in conjunction with either a NYSDEC consent order (as discussed in Section 1) or NYS RCRA regulations.

4.1.1. Oil/water collection sump system

As discussed in Section 1, during the 1980s, oil was discovered in the facility's storm water discharge to Ley Creek and within the existing underground storm sewer system beneath the manufacturing building. It was suspected that the presence of this oil was related to the historic operation of the underground sumps and tanks associated with the injection molding operations. In response to these findings, GM implemented a program to remove the building roof drainage from the underground system and replace it with an overhead system to minimize the release of oils which may have been trapped within the underground system during rain events. The new overhead system was installed in two phases in 1986 and 1988 and was constructed in conjunction with rehabilitation of selected storm sewers outside the facility, as discussed in the following subsection.

Once use of the underground storm sewers beneath the building was discontinued, the storm sewers were plugged, and a series of collection sumps was installed at certain locations where these sewers formerly exited the building and tied into the outside storm water collection system. These sumps, designated oil/water collection sumps 1, 2, 3, 4, 5, 6, 7 and 8, were installed in two phases in 1986 and 1988 in order to capture residual oil/water which may have been present within the lines. The sump locations are presented on Figure 1-9 and are generally located around the perimeter of the manufacturing building. The sumps operate on a passive collection basis and pump the collected oil/water to the IWT plant for treatment and discharge through Outfall 003 under SPDES permit. The sumps tend to operate more during periods of wet weather than dry weather, which is likely due to infiltration of storm runoff or ground water into the abandoned storm sewer system. Operation of the eight sumps is ongoing. Storm sewer modifications are discussed in detail in Attachment 3 of Appendix G.

4.1.2. Storm sewer rehabilitation

In conjunction with the abandonment of the underground storm sewers beneath the manufacturing building and installation of the oil/water collection sumps, certain storm sewers located outside the facility buildings were rehabilitated in two phases in 1986 and 1988. The sewers which were rehabilitated were those associated with Outfall 003 and the previously detected concentrations of PCBs present within the discharge at the outfall. The project included the abandonment of certain sewers and the installation of new sections of sewer on the west side of the facility. Sewer rehabilitation efforts also included sliplining portions of the sewer and installation of a cured in place liner in a section on the west side of the facility. The sections of the storm sewer restoration work are depicted on Figure 1-8, which represents the current storm sewer configuration at the facility. Storm sewer modifications are discussed in detail in Attachment 3 of Appendix G.

4.1.3. Thinner area ground water recovery system

In 1985 and 1986, GM investigated an area on the west side of the facility where three 5000 gallon thinner USTs had been removed. The investigatory efforts, which are discussed in Sections 2 and 3, indicated that a localized area of ground water was impacted by toluene, ethylbenzene and xylenes. A remedial action plan to address the extent of the impacted ground water was developed and implemented (EDI 1986b). The implementation of the remedial action plan consisted of the installation and operation of two ground water collection trenches. The trenches were installed in 1987 and were designed to intercept the shallow ground water flow from the former tanks area and the downgradient area. One trench, designated the south collection trench, is located just downgradient of the former tank locations, runs in the east-west and north-south directions and drains to a collection sump located in between the two trench runs. The other trench, designated the north collection trench, is located outside the northwestern corner of the 1975 building addition, runs in the east-west direction, and drains to a collection sump on its east end. Trench locations are depicted on Figures 2-4 and 2-5.

From the two collection sumps, the ground water is pumped via overhead piping which runs through the manufacturing building to the IWT plant. The impacted ground water is then treated at the IWT plant prior to discharge through Outfall 003 under SPDES. Operation of the oil/water collection system has been ongoing since approximately 1987.

4.1.4. Surface impoundment closure

In 1989, the two existing surface impoundments located north of the facility buildings were closed under a RCRA closure and post-closure monitoring program. The closure program consisted of the removal and disposal of impacted sediment from the two impoundments. Facility records do not indicate whether sediment from the portion of impoundment #1 which was covered by the 1975 building addition was removed.

Surface Impoundment #2 was backfilled with clean soil, regraded, and covered with a soil layer and vegetative seeding. Impoundment #1 was backfilled with clean soil and soil containing PCBs at concentrations measured up to 40 mg/kg from the Meadowbrook/Hookway site in Syracuse, New York, regraded, and covered with 1 ft clay, 1.5 to 2 ft soil, and vegetative seeding. The post-closure monitoring program consisted of the installation and routine sampling and analysis of ten ground water monitoring wells near the impoundments. Until September 25, 1997, the effective date of the Order, the ground water monitoring program was conducted quarterly. The Order, which supersedes the requirements of the post-closure monitoring program, requires semi-annual monitoring.

4.1.5. Ley Creek relief interceptor sewer area IRM program

As discussed in Section 1, in 1991, Onondaga County installed a new sanitary sewer within the right of way located on Factory Avenue along GM's northern property boundary. During installation of this sewer line, a concern was noted with respect to soil and ground water quality in this general area. In response, GM entered into a Consent Order with NYSDEC to develop and implement an IRM program to address soil and ground water potentially impacted by PCBs present along the proposed location of the new sewer line. The IRM work plan (O'Brien & Gere Technical Services 1991) called for the temporary stockpiling of impacted soil on GM property and the installation and operation of a temporary ground water treatment system to treat excavation water which may have been impacted by PCBs. A soil boring program performed prior to the sewer installation indicated a localized area of concern near Outfall 003, as discussed in Sections 2 and 3. The concentrations of PCBs detected within soil in this area were suspected to be related to the former wastewater discharge swale from the facility. The project was performed from approximately June to December of 1991. Soil excavated by Onondaga County's subcontractor was stockpiled in lined storage cells on GM property pending characterization and disposal. The temporary ground water treatment system was constructed on GM's property near the sewer work area. The temporary treatment system processes consisted of a primary settling tank, followed by a rotary drum vacuum filter (RDVF) and granular activated carbon towers and a final effluent holding tank. Treatment operations were performed throughout the project, sometimes on a 24-hr basis. Upon OCDDS approval, treated water was batch discharged to the OCDDS POTW system, in accordance with the NYSDEC-approved work plan. Ground water treatment operations were completed by the end of 1991, and the treatment system was dismantled in 1992.

Soil excavation activities were performed in conjunction with the installation of sheet piling and bentonite mixture cut-off walls at designated perimeter locations. The cut-off walls were designed and installed by Onondaga County and its subcontractors. Installation of the sheet piling was performed by GM and its subcontractors. Between June 17 and 28, 1991, soil was excavated in accordance with the IRM work plan.

The soil which was generated by the sewer line installation activities in the IRM work area was stockpiled on GM property in lined storage cells. Two storage cells were constructed, one located in the northwest corner of the property (large cell) and one in the north central portion of the property (small cell). The small cell, which actually consisted of three smaller cells, was used to store the more highly impacted soil, while the large cell was used to store lower concentrations of PCBs. The storage cells were constructed using an approximate 3 ft high by 5 ft wide earthen berm along the cell perimeter and a 20 mil PVC liner. The floor of each cell was sloped to a central collection point to facilitate the collection of precipitation runoff. Precipitation runoff collected during the project was pumped to the temporary ground water treatment system for treatment and discharge.

Soil disposal operations were performed during 1991 and early 1993. In July 1991, the small cell was closed and disassembled. Closure of the cell consisted of removal and disposal of the impacted soil and PVC debris.

Approximately 1544 tons of this material were disposed of at the Chemical Waste Management (CWM) Model City Landfill in Model City, New York.

Confirmation sampling was performed in the small cell project work area following the soil removal activities. The confirmation sampling program, performed in accordance with the approved IRM work plan, indicated concentrations below the IRM cleanup level of 10 mg/kg PCBs, as discussed in Section 3. Analysis of selected soil samples was also performed for total and TCLP chromium. The results of this analysis indicated levels of chromium ranging from 48 to 1200 mg/kg. TCLP testing indicated concentrations of chromium below the method detection limit of 0.5 mg/L.

In August 1991, additional soil was excavated during the sewer line project. This additional soil was stored in the large cell. A smaller cell was also constructed to store more highly impacted material and diatomaceous earth from the RDVF system. These cells were covered with 20 mil PVC membrane to minimize precipitation runoff from contacting the soil. Following completion of the excavation activities, GM implemented a routine inspection program to monitor the condition of the cells during the interim storage period.

In March 1993, and from September to October 1993, approximately 15,363 tons of PCB-impacted soil from the cells was transported and disposed of at either CWM or at the United States Pollution Control, Inc. (USPCI) Grassey Mountain Landfill in Clive, Utah. Due to high moisture content, the soil from the small cell to be shipped to CWM was stabilized with a 3:1 ratio of kiln dust prior to loading onto CWM's trucks. Confirmation soil sampling performed in the footprint of the large cell after soil removal indicated concentrations of PCBs below 10 mg/kg. This sampling included the collection and analysis of ten surface soil samples from the former footprint of the cell.

A separate portion of the IRM activities involved the disposal of soil which Onondaga County had stored at its Ley Creek Transfer Station located on Seventh North Street. In response to concerns over the potential for this soil to be impacted by PCBs, GM performed a sampling and analysis program. Sixty-six soil samples (one per truckload which had been placed there) were collected and analyzed. The results indicated that the soil contained PCB concentrations less than 50 ppm. However, in October 1993, GM elected to load, transport and dispose of this soil at CWM Model City Landfill. During the project, approximately 1564 tons of soil was disposed of at CWM. Confirmation soil sampling, which consisted of the collection and analysis of six surface soil samples and subsequent analysis for PCBs, indicated non-detectable levels of PCBs, thereby confirming that the impacted material had been removed.

4.2. Decommissioning activities

In November 1995, at the request of counsel, O'Brien & Gere completed a facility assessment for the Former IFG Facility. Although the resulting report is a privileged and confidential, prepared at the request of counsel document, the information contained in the report is summarized here and was used to identify facility decommissioning needs. The Facility Assessment identified areas of environmental concern relative to the deactivation of the facility structures and equipment. Based on the results of the Facility Assessment, bid specifications were developed by O'Brien & Gere, and GM began deactivation operations in May 1996 using outside contractors.

Deactivation activities, described in further detail below, included coal pile removal, trench drain cleaning, tank removal/closure, surface cleaning, and piping removal. Wastes associated with the deactivation activities were collected and managed by the contractor and disposed by GM. Wastewater generated during cleaning and decontamination was treated at the IWT plant at the facility. In accordance with the PCB Spill Cleanup Policy under the Toxic Substances Control Act (TSCA), PCB cleanup criteria for the deactivation program are 10 $\mu g/100\ cm^2$ for surface wipe samples or 100 $\mu g/100\ cm^2$ for surface wipe samples in areas to be encapsulated.

In December 1995, O'Brien & Gere developed Cleaning Project No. 1 bid specification for the deactivation of the coal pile area, decontamination of the coal silos, deactivation of a 300 gallon solvent tank, flushing of facility process sewers, and decontamination of small areas of concrete floor. Marcor Environmental was awarded the project in May 1996 and the deactivation activities were completed by June 1996. Coal was removed from the coal pile area/bulk handling building and from the coal silos and tunnel. Upon removal of the coal from the silos and tunnel, surfaces were decontaminated to remove surficial grime. Oil contained in the powerhouse compressor trench drains was removed, and the trenches were decontaminated using PCB surface cleaning procedures. Upon completion of decontamination, confirmatory wipe samples were collected, and the results indicated PCB concentrations below the cleanup criteria. The 300 gallon solvent tank located in the paint room was drained, cleaned, flushed and removed along with associated piping. PCB surface cleaning was conducted in the paint mix room, the paint storage room and at the loading dock to remove oil and residue from concrete surfaces. Upon completion of decontamination, confirmatory wipe samples were collected from each area, and the results indicated PCB concentrations below the cleanup criteria. The 12,000 gallon caustic concrete tank associated with the wastewater treatment operation was cleaned and permanently closed in place.

In July 1996 O'Brien & Gere prepared a surface decontamination specification for the removal of dust, oil and grime from approximately 750,000 sq. ft. of concrete floor and above floor (structural steel, ductwork, piping, walls, etc.) surfaces. The specification detailed the decontamination of these surfaces to meet the aforementioned PCB cleanup criteria. In March 1997, Smith Technologies Corporation (Smith) was awarded the surface cleaning project at the facility and observation of field activities was conducted by O'Brien & Gere. In September 1997, the project was placed on hold until contract negotiations between Smith and GM were completed.

Based on a bid specification prepared by O'Brien & Gere, GM solicited proposals to perform deactivation of several systems at the facility. The specification covered the following:

- Surface cleaning
- Removal of several hundred linear feet of process oil piping
- Deactivation of the oil reclamation system including the storage tanks
- Deactivation of the emulsion filtering and transfer system
- Decommissioning of the paint mix room including mixing vessels
- Cleaning of the powerhouse floor drains and associated piping
- Demolition of the fly ash hopper
- Decontamination of the mold storage building
- Decontamination of the glycol pumping station
- Abatement of damaged asbestos-containing material in the main manufacturing building.

Decontamination/decommissioning activities continued in 1999 as an IRM under the Consent Order. These activities were designated the Phase 1 and Initial Phase 2 IRMs. Generally, the IRMs consisted of cleaning floors and aboveground surfaces, cleaning and dismantling various process systems, and removing residue from various facility sumps and drains. These activities were conducted in accordance with the Phase 1 and Initial Phase 2 IRM Work Plans, the Consent Order (including the Redevelopment Addendum, effective November 23, 1999), and the Stipulation between GM and NYSDEC (effective August 23, 1999) and are documented in the Phase 1/Initial Phase 2 Certification Report (O'Brien & Gere 2000b). As of April 2000 the decontamination/deactivation activities continue as the Phase 2 IRM.

4.3. Sewer televising IRM

A sewer televising IRM is planned to evaluate the integrity of the storm sewer leading to Outfall 003, the oil/water collection sumps in the manufacturing building and their associated piping. Cleaning of the sumps and sewer lines to facilitate televising will also be conducted as part of this IRM. The IRM is being implemented to gain a better understanding of potential sources of contamination such as potential ground water infiltration and/or residues in the storm sewers. The sewer televising IRM is described in the Sewer Televising IRM Work Plan (O'Brien & Gere 2000c).

5. Remedial investigation conclusions

Detected concentrations of constituents in site media are summarized in figures included in Appendix C, with exceedances of screening levels for soils and standards for ground water highlighted. In addition, detections above screening levels in soils and standards in ground water are depicted on Figures 3-5 through 3-11. The following conclusions were drawn from the site data and evaluations documented in Sections 1 through 4 of this report:

Hydrogeology

- The site geology from the surface consists of fill (1 to 16 ft thick), glaciolacustrine deposits (7 to 28 ft thick) and lodgement till which is underlain by a red shale bedrock. The glaciolacustrine unit is divided into upper, middle, and lower zones. The middle glaciolacustrine zone contains greater amounts of silt and clay than either the upper or lower zones. The glacial till, which underlies the glaicolacustrine unit, varies in elevation across the site and generally slopes to the northeast.

- Ground water is typically encountered from 3 to 13 ft below grade. The unconfined overburden aquifer comprises the saturated portions of the fill and the glaciolacustrine unit. The overburden aquifer is divided into shallow and deep zones. Beginning near the northern boundary of the manufacturing building, the depth to till increases. As a result, the aquifer thickness increases and both shallow and deep ground water zones are present. The deep aquifer is not present in the southern portion of the property due to the shallow depth of the till.

- In the northern portion of the site, the shallow and deep overburden ground water zones are separated by a zone of higher clay content. This zone likely limits the downward migration of VOCs north of the manufacturing building and northern property area.

- Ground water in the shallow and deep overburden aquifer zones flows northeast toward Ley Creek. The shallow overburden ground water (upper 15 ft of saturated overburden) flow direction converges in the southwest property area and northeast property area likely due to storm drain effects.

- In the shallow overburden aquifer zone, the horizontal hydraulic conductivity values range from 7.51 x 10^{-3} ft/day to 1.76 ft/day. The estimated ground water velocity in the shallow zone varies from 0.07 to 16.4 ft year. The quantity of ground water discharging along the downgradient boundary in the shallow zone is estimated to range from 15 to 3553 gal/day.

- In the deep overburden aquifer zone, the horizontal hydraulic conductivity values range from 4.25 x 10^{-2} to 3.12 ft/day. The estimated ground water velocity in the deep overburden aquifer zone ranges from 0.44 to 32.5 ft/day and the quantity of ground water discharging along the downgradient boundary in the deep zone is estimated to range from 64 to 4667 gal/day.

- Vertical permeability/hydraulic conductivity values of the glaciolacustrine unit range up to three orders of magnitude lower than horizontal values, which suggests that horizontal ground water flow is the preferential flow path. This conclusion is consistent with the varved and fine grained nature of the glaciolacustrine deposits.

- An upward flow potential exists between the upper glaciolacustrine deposits and the underlying till. This information suggests that the lodgement till layer behaves as an aquitard in the vicinity of the site.

Soil. The following conclusions related to data gaps identified during completion of the Final 1999 Supplemental RI Work Plan are discussed as follows:

- Six soil borings (OBG-TB-1, OBG-TB-4, OBG-TB-5, OBG-TB-14, OBG-TB-15, and OBG-TB-19) were installed immediately upgradient of oil/water collection sumps 2, 3, 6, 7 and 8 to evaluate whether the bedding materials associated with the inactive storm sewer lines leading to these sumps are a contaminant pathway beneath the manufacturing building. PCBs, VOCs, SVOCs, and site related metals were detected in these borings; however, only PCBs (oil/water collection sump 7), TCE (oil/water collection sump 3), benzo(a)pyrene (oil/water collection sump 8), nickel and zinc (oil/water collection sumps 2, 3, 6, and 7) and copper (oil/water collection sumps 7 and 8) were detected at concentrations above the respective NYSDEC TAGM 4046 screening levels. These data suggest that some migration may have occurred in the bedding material associated with the inactive storm sewers leading to oil/water collection sumps 2, 3, 6 and 7.

- NAPL screening was performed on eight soil borings (OBG-TB-2, OBG-TB-3, OBG-TB-6, OBG-TB-7, OBG-TB-08, OBG-PZ-4, OBG-PZ-5, and OBG-PZ-6) installed along the abandoned lines leading to oil/water collection sumps 1 and 5. The NAPL screening was intended to evaluate the presence of PCB LNAPL. With the exception of the screening performed on three borings (OBG-PZ-4, OBG-PZ-5, and OBG-PZ-6) along the abandoned line leading to oil/water collection sump 5, no positive UV fluorescence was observed. No floating NAPL was observed on ground water in the piezometers completed at these three locations (OBG-PZ-4, OBG-PZ-5, and OBG-PZ-6), indicating that no measurable LNAPL is present on ground water in the vicinity of the abandoned line leading to oil/water collection sump 5.

- VOCs (predominantly TCE) extend down to at least 16 ft below the floor of the manufacturing building in the vicinity of the paint room. TCE was detected above the NYSDEC TAGM 4046 screening level in eight of ten samples collected in the vicinity of the paint room.

- A total of five surface soil samples were collected in the vicinity of the general storage area located in the southeast property area. PCBs, SVOCs, and metals were detected above the NYSDEC TAGM 4046 screening levels in these samples. The detected concentrations are indicative of residual contamination, possibly associated with the storage of equipment in this area.

- Two soil borings (OBG-TB-22 and OBG-TB-23) were installed beneath the parking lot in the southeast property area to evaluate subsurface conditions in this area. SVOCs were detected in one sample collected from OBG-TB-22 at concentrations above the NYSDEC TAGM 4046 screening levels. Metals were detected at concentrations above the NYSDEC TAGM 4046 screening levels at both locations.

- Two soil borings (OBG-TB-30 and OBG-TB-38) were installed to evaluate the presence of contamination in the vicinity of the former TCE storage area located in the IWT plant area. Though 1,1-DCA, 1,2-dichlorobenzene, methylene chloride, TCE, and cis-1,2-DCE were detected in these borings, none of these VOCs were detected above the NYSDEC TAGM 4046 screening levels in these samples, indicating that contamination to subsurface soil from historical TCE storage in this area is not evident.

- Surface soil in the IWT plant area was found to contain PCBs, SVOCs, and metals above the NYSDEC TAGM 4046 screening levels. Generally, the data indicate low level contamination in surface soil, possibly associated with IWT plant operations. The maximum PCB detection (3,900 mg/kg) appears to be isolated (the next highest PCB detection was 14 mg/kg).

- Dioxins and furans detected in surface soil in the vicinity of the IWT plant were below the NYSDEC TAGM 4046 screening level, and are therefore not of concern.

- Four borings were installed during the 1998/1999 Supplemental RI to investigate two former fuel tanks believed to be in the vicinity of the IWT plant. Following installation of the borings, a copy of the original tank closure report was located. The report showed that the tanks were in fact located in the vicinity of the powerhouse (east of the area investigated in 1998/1999) and that confirmatory samples collected at the time of the closure showed no detections, indicating clean closure of the fuel tanks. A copy of the closure report is included as Exhibit F.

- Soil boring OBG-TB-24 was installed to evaluate subsurface soil conditions beneath the parking lot in the northeast property area. SVOCs and metals were detected above the NYSDEC TAGM 4046 screening levels in this boring.

- Four surface soil samples (SS-99-14, SS-99-15, SS-99-16, and SS-99-17) were installed to evaluate surface soil in the area east of the administration building. SVOCs and metals were detected above the NYSDEC TAGM 4046 screening levels in each of these samples. PCBs were detected above the NYSDEC TAGM 4046 screening level in one of the surface soil samples (SS-TB-17).

- The former swale was delineated during the trench activities completed in the northern property area. The former drainage swale was visually evident as a black silt layer mixed with some organic matter. The delineation of the former swale is depicted on Figures 3-11A, C, and E. Chlorobenzene was the only VOC detected in samples collected from the former drainage swale. PCBs and metals were also detected above NYSDEC TAGM 4046 screening levels in samples collected from the former drainage swale area.

- Based on the results of boring OBG-TB-29, fill consisting of silt, sand and gravel, was encountered. Zinc was the only constituent detected above the NYSDEC TAGM 4046 screening level. It does not appear that impoundment material extends beyond the limits of closed surface impoundment #1.

- The contents and limits of the on-site landfill were investigated during trenching activities. Revised limits of the on-site landfill are depicted on Figure 1-10. Paint sludge, fly ash, and sludge were observed during the trenching activities. The northern extent of the landfill was not encountered during the trenching activities. Trenching to the north was stopped at the fence line. The approximate depth of fill encountered during the trenching activities was 8 ft below surface.

- Four soil borings (OBG-TB-25, OBG-TB-26, OBG-TB-27, and OBG-TB-28) were installed to evaluate general fill activities in the northern property area. Fill was observed to be 8, 2, 6, and 8 ft thick, respectively, at these locations. PCBs and metals were detected above the NYSDEC TAGM 4046 screening levels in these borings.

- PCBs, SVOCs, and metals were detected above NYSDEC TAGM 4046 screening levels in soil in the vicinity of the storage pad located in the southwest property area, possibly as a result of storage pad activities.

- The highest SVOC detections at the site were detected in one sample collected from the vicinity of the transformer/switch house. PCBs and metals were not detected above NYSDEC TAGM 4046 screening levels in the vicinity of the transformer/switch house.

- NAPL screening performed on borings located in the IWT plant area, the northeast property area, the northern property area, and the southwest property area showed no positive identification of NAPL.

The following text provides a summary of the detected constituents in each area. The discussion is provided by constituent group, in the following order: PCBs, VOCs, SVOCs, dioxins/furans, and metals. Generally, PCBs were present above the NYSDEC TAGM 4046 screening level of 1 mg/kg in surface soil in the vicinity of the general storage area located in the southeast property area, the IWT plant area, the on-site landfill and the former storage cell located in the northern property area, and the southwest property area. PCBs were present in subsurface soil above the 10 mg/kg subsurface soil NYSDEC TAGM 4046 screening level beneath the manufacturing building, at one location in the IWT plant area, in the northeast property area, in the on-site landfill, the general fill area, the former drainage swale area, and the southwest property area. Specifically, detections of PCBs above NYSDEC TAGM 4046 screening levels were located in the following areas:

Manufacturing building

- PCBs were detected above the screening level of 10 mg/kg in soil beneath the manufacturing building in the vicinity of the abandoned underground oil hydraulic collection sumps and tanks, the paint room, and the abandoned storm sewer trenches beneath the facility floor. Concentrations above the screening levels generally ranged from 13 to 47 mg/kg, with the exception of three samples, OBG-TB-19, BH-35, and BH-37. Sample OBG-TB-19, located in the vicinity of oil/water collection sump 7 (near the paint storage room) contained 140 mg/kg PCBs. Samples BH-35 and BH-37 contained 2700 mg/kg and 4300 mg/kg, respectively. The results in samples BH-53, BH-54, BH-38, and HA-6 show that the PCB concentration in BH-37 is localized. Similarly, results in samples BH-18, BH-32 and BH-36 indicate that the PCB concentration in BH-35 is also localized. NAPL field screening was positive in three sample locations along oil/water collection sump 5 line; however, NAPL was not measured in the piezometers completed at these locations.

Southeast property area

- PCBs were detected above the screening level of 1 mg/kg in one surface soil sample collected from the northern side of the general storage area at a concentration of 8 J mg/kg.

IWT plant area

- PCBs were detected above the screening level of 1 mg/kg in surface soil samples collected north of the clarifiers, south of the chromium water conditioning tanks, and in the vicinity of the former liquid waste incinerator. Generally concentrations above screening levels ranged from 2 to 14 mg/kg, with the exception of surface soil sample SS-99-26, that showed a detection of 3900 mg/kg. Based on data from surface soil samples SS-99-25 and SS-99-27, collected east and west of SS-99-26, the maximum detection appears isolated.
- PCBs were detected above the screening level of 10 mg/kg in one subsurface soil sample (OBG-TB-44) at 190 mg/kg from the 2 to 4-ft interval, in the vicinity of the former fuel oil tanks

Northeast property area

- PCBs were detected above the screening level of 10 mg/kg in one subsurface soil sample (OBG-TB-37) collected adjacent to the administrative building in the northeast property area at 24 J mg/kg in the 12 to 14-ft interval.

- PCBs were detected above the screening level of 1 mg/kg in one surface soil sample (SS-99-17) collected adjacent to the manufacturing building in the northeast property area at 7 mg/kg.

Northern property area

- PCBs were detected above the screening level of 1 mg/kg in six surface soil samples collected from the on-site landfill area showed detections above screening levels. With the exception of one sample, concentrations ranged from 3 to 200 mg/kg. PCBs were detected at 2,600 mg/kg in SS-99-06, located near the property boundary in close proximity to the NMPC property.
- PCBs were detected above the screening level of 10 mg/kg in subsurface soil samples collected during the trenching activities in the on-site landfill area showed detections of PCBs above screening levels ranging from 17 mg/kg to 1,500 mg/kg. The highest concentrations corresponded to samples (T01-1, T01-2, T01-3, T02-3, and T04-1) of paint sludge, other sludge, or stained material.
- PCBs were detected above the screening level of 10 mg/kg in one subsurface soil sample (OBG-TB-28) in the general fill area showed a PCB detection of 44 mg/kg in the 12 to 14-ft interval. This sample is also located in the former swale area.
- PCBs were detected above the screening level of 10 mg/kg in subsurface soil samples collected during the trenching activities in the former drainage swale showed concentrations of PCBs above screening levels ranging from 84 to 6800 mg/kg. The highest concentrations (T06-1, T08-2, T12-1, and T12-2) corresponded to samples of organic material having an oily odor, sludge like soil, and black silts having a paint thinner odor.
- During the trench activities the former drainage swale was visually evident as a black silt layer that contained some organic matter, and the approximate location of the former drainage swale is shown in Figure 3-11. The higher PCB concentrations are associated with the black silt layer.

Southwest property area

- PCBs were detected above the screening level of 1 mg/kg in three surface soil locations in the vicinity of the former storage pad at concentrations ranging from to 2 to 20 mg/kg.
- PCBs were detected above the screening level of 10 mg/kg in one subsurface soil location in the vicinity of the former storage pad at concentrations up to 44 mg/kg in subsurface soil.

Generally, VOCs detected above the NYSDEC TAGM 4046 screening levels were limited to toluene, xylene, ethylbenzene, TCE and cis-1,2-DCE.

The VOCs toluene, xylene, and ethylbenzene were detected above NYSDEC TAGM 4046 screening levels in subsurface soil in the vicinity of the former thinner tanks area, the on-site landfill located in the northern property area, and the former compactor area (west of the manufacturing building). TCE and cis-1,2-DCE were present above the screening levels in soil beneath the manufacturing building in the vicinity of the paint room, and in the northern property area in the vicinity of the on-site landfill. Specifically, VOC detections above screening levels were located in the following areas:

Manufacturing building

- TCE and cis-1,2-DCE were detected above the screening levels in soil beneath the manufacturing building in the vicinity of the paint room. TCE detections above screening levels generally ranged from 0.73 to 14 mg/kg, with the exception of three samples, BH-46, BH-9 and BH-47. At these locations, TCE was detected at concentrations ranging from 47 to 150 mg/kg. These higher concentrations were located between the paint room and the abandoned line leading to oil/water collection sump 6, located south of the paint room.

Former thinner tanks area

- Toluene, ethylbenzene and xylene were detected at concentrations up to 720, 61 and 330 mg/kg, respectively, in subsurface soil in the former thinner tanks area. Generally, these concentrations were from samples collected from between 9 and 15 ft below grade, with the exception of samples collected from T-13, T-15, T-21, and HA-1 where detected concentrations above the screening levels were detected at shallower intervals of 5 to 7 ft below grade.
- Toluene and xylene are present in subsurface soil in the vicinity of the former compactor area (HA-1), located in the former thinner tanks area.

Northeast property area

- TCE was detected marginally above the screening level in one subsurface soil sample in the northeast property area.

Northern property area

- VOCs including TCE and cis-1,2-DCE were detected in one sample close to the property boundary west of the estimated limits of the on-site landfill.
- VOCs including xylene and ethylbenzene were also detected in subsurface soil in the on-site landfill area at concentrations above screening levels ranging from 4 to 210 mg/kg, and 7.8 to 36 mg/kg. These concentrations were detected in samples of black sandy material (possibly ash) and paint sludge.

- Xylene and ethylbenzene were also detected in T-30, a location downgradient of the former thinner tanks area.

Southwest property area
- TCE was present in subsurface soil in the southwest property area.

SVOCs were detected above the NYSDEC TAGM 4046 screening levels in surface soil samples collected from the vicinity of the former general storage area located in the southeast property area, the IWT plant area, northeast property area, the vicinity of the on-site landfill located in the northern property area, and the transformer/switch area in the former tanks area. With the exception of one sample collected in the vicinity of the transformer/switch area (where concentrations ranged up to 1200 mg/kg), and to a lesser degree the IWT plant area (where concentration ranged up to 18 mg/kg), SVOCs in surface soils were only marginally above screening levels. SVOCs were also detected above screening levels in subsurface soil beneath the manufacturing building, beneath the parking lot in the southeast property area, in the vicinity of the transformer/switch area located in the former thinner tanks area, the northeast property area, the vicinity of the on-site landfill in the northern property area, and the southwest property area. Similar to surface soils, detections were generally only marginally above the screening levels, with the exception of one surface soil location in the vicinity of the transformer/switch area (where concentrations ranged up to 1200 mg/kg). Specifically, SVOCs were detected above screening levels in the following areas:

Manufacturing building
- Benzo(a)pyrene and phenol were detected above the screening levels in soil beneath the manufacturing building in the vicinity of the abandoned oil/water collection sump 8.

Southeast property area
- SVOCs were detected above screening levels in surface soil in the vicinity of the general storage area.

- SVOCs were detected above screening levels in subsurface soil beneath the parking lot.

IWT plant area
- SVOCs were detected above screening levels in surface soil samples collected south of the former chromium water conditioning tanks (SS-99-22 and SS-99-23).

- SVOCs were detected above screening levels in surface soil south of the former liquid waste incinerator (SS-99-24, SS-99-26, SS-99-2).

- SVOCs were detected above screening levels in general IWT plant area surface soil west and south of the clarifiers and north , west and south of the IWT plant building (SS-99-28, SS-99-29, and SS-99-30).

Former thinner tanks area
- SVOCs were detected above screening levels in one subsurface soil location (OBG-TB-46) in the vicinity of the transformer/switch house.

- SVOCs were detected above screening levels in surface soil in two samples in the vicinity of the transformer/switch house.

Northeast property area
- SVOCs were detected above screening levels in surface and subsurface soil.

Northern property area
- Benzo(a)pyrene, benzo(b)fluoranthene, and di-n-octyl phthalate were detected above the screening levels in surface soil in the vicinity of the on-site landfill.

- 2-Methylphenol, 4-chloro-3-methylphenol, and phenol were detected above screening levels in subsurface soil in the vicinity of the on-site landfill.

Southwest property area
- SVOCs were detected above screening levels in surface and subsurface soil.

Site-related metals were detected above the NYSDEC TAGM 4046 screening levels in subsurface soil beneath the manufacturing building, southeast property area, IWT plant area, former thinner tanks area, northeast property area, and the northern property area. Metals were also detected above screening levels in surface soil in the southeast property area, IWT plant area, former thinner tanks area, northeast property area, northern property area, and the southwest property area. Specifically, metals were detected above screening levels in the following locations:

Manufacturing building
- Chromium, nickel, copper, and zinc were detected above the screening levels in soil beneath the manufacturing building at locations adjacent to

former electroplating sumps. Copper, nickel, and zinc were detected above the screening levels in soil in the vicinity of the former oil/water collection sumps.

Southeast property area

- Arsenic, copper, nickel, zinc, beryllium and iron were detected above the screening levels in surface soil in the vicinity of the general storage area located in the southeast property area. Zinc was also detected above the screening level in the parking lot located in the southeast property area.

IWT plant area

- Arsenic, chromium, copper, lead, nickel, zinc, beryllium and iron were detected above NYSDEC TAGM 4046 screening levels in soil in the vicinity of the IWT plant.

Former thinner tanks area

- Nickel, zinc, beryllium, and iron were present above screening levels in soil in the former thinner tanks area.

Northeast property area

- Copper, zinc, beryllium and iron were present above screening levels in soil in the northeast property area.

- Chromium and nickel were present above screening levels in soil in the vicinity of the acid-alkali bunker, located in the northeast property area.

Northern property area

- Arsenic, chromium, copper, nickel, zinc, barium, mercury, beryllium, iron, and selenium were present above NYSDEC TAGM 4046 screening levels in soil in the northern property area.

Southwest property area

- Beryllium and lead were detected above the NYSDEC TAGM 4046 screening levels in one surface soil sample.

- Concentrations of site-related metals chromium, copper, nickel, and zinc also exceeded the screening levels in both surface soils and subsurface soils.

Samples from five surface soil locations from the vicinity of the former liquid waste incinerator (IWT plant area) were analyzed for chlorinated dioxins and furans. Chlorinated dioxins and furans were detected in each of the samples. Calculated 2,3,7,8-TCDD equivalents were below the NYS TAGM 4046 screening level for 2,3,7,8-TCDD.

Samples collected from historical locations were also analyzed for oil and grease. Oil and grease were detected in the following areas:

- SAE 30w oil residue is present in soil beneath the manufacturing building in the vicinity of former underground hydraulic oil sumps and tanks and an abandoned storm sewer trench.

- Oil & grease is present in subsurface soil in the vicinity of the IWT plant.

Ground water

- Toluene, ethylbenzene, and xylene are present in facility ground water at concentrations higher than NYS Class GA standards, generally in the vicinity of and downgradient of the former thinner tanks area. Ground water in this area is recovered for IWT plant treatment and discharge through Outfall 003 under the September 25, 1997 SPDES permit.

- The BTEX plume has been defined to the east by reference to OBG-PZ-3 and OBG-PZ-7 where no BTEX was detected, to the west by wells T-6 (located southwest of the former thinner tanks) and T-7 (located west of the former thinner thanks), and to the south by well T-1 where 9 µg/L of BTEX was detected. The northern extent is likely limited by the northern recovery trench, because BTEX was not detected in well TB-33(located downgradient of the recovery trench) and wells OBG-6S and OBG-9S (located at the northern property boundary). The lateral extent of the BTEX plume is illustrated on Figure 3-13.

- Chlorinated hydrocarbons, consisting mainly of TCE and cis-1,2-DCE, are present at various locations at the facility at concentrations above NYS Class GA standards. The highest concentrations appear to originate in the vicinity of the paint room and migrate in the deep ground water zone in lenses above the till to the north/northeast. The extent of VOCs above the NYS Class GA standards in the north and northeast deep overburden ground water has not been completely defined.

- Monitoring well OBG-15, located in the southwest property area immediately adjacent to the manufacturing building and downgradient of the former container storage pad and former tank farm building (mold storage building), contained 277 µg/L of total VOCs, primarily TCE. The information suggests that past activities the mold storage building may be a source of VOCs.

- The likely source of VOCs detected at MWI-3 is near the paint room as evidenced by the elevated VOCs and PID readings, as well as the reported odors at soil borings BH-47, BH-49, and BH-9. The source of the chlorinated VOCs in this area is likely the paint room area.

- VOC detections were noted at OBG-10S, MW-2S and W-11S indicating that VOCs in the shallow zone are limited to the northern side of the manufacturing building and administration building.

- Along the northern property boundary, adjacent to Factory Avenue, no VOCs were detected in the shallow ground water zone which indicate that no VOCs are migrating off-site in the shallow ground water zone.

- No VOCs were detected at MW-1S, MW-3S, MW-4S and MW-5S located around closed surface impoundments #1 and #2. These data, in conjunction with the low concentration detected at MW-2S (2 µg/L of total VOCs), indicate that the former surface impoundments are not a source of VOCs.

- Since no significant concentrations of VOCs were detected in the shallow ground water zone, it can be concluded that the source of VOCs to the deep ground water zone is from the manufacturing building, likely near MWI-3 and near soil borings BH-47, B-49, and B-9. The VOCs likely migrate vertically downward in this area and then migrate horizontally within the lenses of the deeper glaciolacustrine unit. The deeper silt and fine sand layer reflects the topography of the till layer which slopes to the northeast toward OBG-6D. Field screening data further suggest that VOC migration is limited to small lenses. The northeastern and eastern extent along the axis of the plume is not defined, as the total VOCs at OBG-6D was 68,400 µg/L and no deep wells exist northeast of OBG-6D.

- Total VOC concentrations in monitoring wells located west of OBG-6D are significantly lower, ranging from 12 µg/L to 3,250 µg/L. The source of VOCs in the northwestern area may originate from the area of the manufacturing building.

- The source of VOCs at WT-3R, located in the southwest property area, is unknown.

- No metals were detected at concentrations above the NYS Class GA standards in the 42 wells sampled in 1999.

- At the Ley Creek PCB Dredgings site, the only VOC detected was methylene chloride. This finding is suspect because it is not consistent with ground water chemistry at the site.

- No DNAPL was observed in deep monitoring wells located in the northern property at the Former IFG Facility.

- Chlorinated hydrocarbons, consisting mainly of TCE and cis-1,2-DCE, are present at various locations at the facility at concentrations above NYS Class GA standards. The highest concentrations appear to originate in the vicinity of the paint room and migrate in the deep ground water zone in lenses above the till to the north/northeast. The extent of VOCs above the NYS Class GA standards in the north and northeast deep overburden ground water has not been completely defined.

- PCBs are present in ground water at concentrations above NYS Class GA standards in the vicinity of the on-site landfill, the former surface impoundments, the drainage swale, Ley Creek PCB Dredgings site and the abandoned sewer associated with oil/water collection sump 5.

Outfall 003 and 004 Storm water

- TCE and PCBs (Aroclors 1242 and 1248) are present in the Outfall 003 discharge at concentrations below previous SPDES Consent Order effluent limits, but above the September 25, 1997 SPDES permit final action level for TCE (to become effective three years from the effective date of the Order and SPDES permit) and final effluent limits for PCBs (to be achieved within three years of the effective date of the Order and SPDES permit).

- Historical data indicated that the main contribution of TCE to the Outfall 003 discharge is on the western side of the facility, in the vicinity of the mold storage building.

- Historical data indicated that the main contribution of PCBs to Outfall 003 is at or upgradient of the southwest corner of the facility.

- Manhole sampling to date has not indicated the source of infrequent detections of PCBs in the Outfall 004 discharge.

Ley Creek Surface water

- No VOCs, SVOCs, or PCBs were detected at concentrations above the NYS Class B surface water standards (where available) during the latest rounds of sampling conducted in 1998 and 1999.

- Aluminum and iron were the only metals detected in surface water above the NYS Class B surface water standards. Cyanide concentrations also exceeded NYS Class B surface water quality standards.

Ley Creek Sediment

- The 1998 sampling event conducted during the Supplemental RI work showed metals in sediment above the NYS sediment screening criteria.

- VOCs, SVOCS, PCBs, and chlorinated dioxins and furans were also detected in 1998. There are no sediment criteria for the majority of these compounds. Where available, criteria were not exceeded.

- When evaluated statistically, 1996 and 1998 sediment data show concentrations of Aroclor 1016, Aroclor 1242, and Aroclor 1248 in Ley Creek sediment downstream of the site are statistically greater than upstream levels. However, the concentrations of metals, SVOCs, and VOCs are statistically equivalent with the upstream sediments.

Fish in Ley Creek

- PCBs were present in fish collected in the vicinity of the Ley Creek Deferred Media. Quantitative conclusions could not be drawn related to the proportionate contribution by the Ley Creek Deferred Media to PCBs in fish due to the tendency of the fish collected to migrate for several miles. Aroclors other than those associated with GM's outfall discharge were detected in fish.

General

- With the exception of the need for additional delineation of VOCs in ground water in the deep overburden ground water at the eastern and northeastern boundaries of the Former IFG Facility, the nature and extent of contamination at the site has been sufficiently evaluated to begin preparation of the Supplemental FS.

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TABLES

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
EDIHI85	P-1	9	--	--	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-2	11	--	--	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-3	11	3.0-5.0 5.0-7.0	8 8	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-4	10	4.0-6.0 8.0-10.0	8 8	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-5	15	9.0-11.0	8	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-6	19	10.0-12.0	8	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-7	10	4.0-6.0	8	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-8	10		--	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-9	10		--	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-10	14	8.0-10.0	8	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-11	13	3.0-5.0 5.0-7.0	8 8	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-12	10	8.0-10.0	8	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-13	13	7.0-9.0	8	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	P-14	11	--	--	4.25" HSA w/ SS Sampler	yes	storm sewer trench
EDIHI85	W-1D	35	--	--	4.25" HSA w/ SS Sampler, Shelby tube	yes	site ground water
EDIHI85	W-1S	17.5	--	--	4.25" HSA	yes	site ground water
EDIHI85	W-2D	24.5	--	--	4.25" HSA w/ SS sampler, Shelby tube, rock core	yes	site ground water
EDIHI85	W-2S	10	--	--	4.25" HSA	yes	site ground water
EDIHI85	W-3D	28	--	--	4.25" HSA w/ SS Sampler	yes	site ground water
EDIHI85	W-3S	13	--	--	4.25" HSA	yes	site ground water
EDIHI85	W-4D	24.4	--	--	4.25" HSA w/ SS Sampler	yes	site ground water
EDIHI85	W-4S	11	--	--	4.25" HSA	yes	site ground water
EDIHI85	W-5D	33	--	--	4.25" HSA w/ SS Sampler	yes	site ground water
EDIHI85	W-5S	12.5	--	--	4.25" HSA	yes	site ground water
EDIHI85	W-6D	36	--	--	4.25" HSA w/ SS sampler, Shelby tube, rock core	yes	site ground water
EDIHI85	W-6S	18	--	--	4.25" HSA	yes	site ground water
EDIHI85	W-7D	41.2	--	--	4.25" HSA w/ SS sampler, Shelby tube, rock core	yes	site ground water
EDIHI85	W-7S	12	--	--	4.25" HSA	yes	site ground water
EDIHI85	W-8D	35.5	--	--	4.25" HSA w/ SS Sampler, Shelby tube	yes	site ground water
EDIHI85	W-8S	8	--	--	4.25" HSA	yes	site ground water
EDIHI85	W-9D	36	--	--	4.25" HSA w/ SS sampler, Shelby tube, rock core	yes	site ground water
EDIHI85	W-9S	10	--	--	4.25" HSA	yes	site ground water
EDIHI85	WT-1	15	--	--	4.25" HSA w/ SS Sampler	yes	site ground water
EDIHI85	WT-3	10.5	--	--	4.25" HSA w/ SS Sampler	yes	site ground water
EDIHI85	U-1S	11	--	--	4.25" HSA w/ SS Sampler	yes	background
EDIHI85	U-1D	23	--	--	4.25" HSA w/ SS Sampler	yes	background
EDIHI85	U-2D	16.5	--	--	4.25" HSA w/ SS Sampler	yes	background

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
EDI_II86	003-1	14	2.0-4.0	9	4.25" HSA w/ SS Sampler	no	Outfall 003
			6.0-8.0	9			
			8.0-10.0	9			
EDI_II86	003-2	14	2.0-4.0	9	4.25" HSA w/ SS Sampler	no	Outfall 003
			4.0-6.0	9			
			8.0-10.0	9			
			10.0-12.0	9			
			12.0-14.0	9			
EDI_II86	003-3	5.5	2.0-4.0	9	4.25" HSA w/ SS Sampler	no	Outfall 003
EDI_II86	003-4	14	4.0-6.0	9	4.25" HSA w/ SS Sampler	no	Outfall 003
			8.0-10.0	9			
			10.0-12.0	9			
			12.0-14.0	9			
EDI_II86	003-5	14	4.0-6.0	9	4.25" HSA w/ SS Sampler	no	Outfall 003
			6.0-8.0	9			
			8.0-10.0	9			
			10.0-12.0	9			
EDI_II86	003-6	12	6.0-8.0	9	4.25" HSA w/ SS Sampler	no	Outfall 003
			8.0-10.0	9			
EDI_II86	003-7	10	4.0-6.0	9	4.25" HSA w/ SS Sampler	no	Outfall 003
EDI_II86	003-8	11.5	2.0-4.0	9	4.25" HSA w/ SS Sampler	no	Outfall 003
			4.0-5.5	9			
			5.5-7.5	9			
			7.5-9.5	9			
			9.5-11.5	9			
EDI_II86	003-9	10	4.0-6.0	9	4.25" HSA w/ SS Sampler	no	Outfall 003
			6.0-8.0	9			
EDI_II86	003-10	11.5	6.0-8.0	9	4.25" HSA w/ SS Sampler	no	Outfall 003
			8.0-9.5	9			
EDI_II86	003-11	9	--	--	4.25" HSA w/ SS Sampler	no	Outfall 003
EDI_II86	WT-6	12	--	--	4.25" HSA w/ SS Sampler	yes	Administration building area
EDI_II86	WT-7	21.5	--	--	4.25" HSA w/ SS Sampler	yes	Administration building area
EDI_II86	WT-8	10	--	--	4.25" HSA w/ SS Sampler	yes	Administration building area
EDI_II86	WT-9	12	--	--	4.25" HSA w/ SS Sampler	yes	Administration building area
EDI_II86	WT-10-S	12	--	--	4.25" HSA w/ SS Sampler	yes	Administration building area
EDI_II86	WT-10-D	23.5	--	--	4.25" HSA w/ SS Sampler	yes	Administration building area
EDI_II86	W-11-S	12	--	--	4.25" HSA w/ SS Sampler	yes	Administration building area
EDI_II86	W-11-D	25	--	--	4.25" HSA w/ SS Sampler	yes	Administration building area
EDI_II86	WT-10	20	1.5-3.0	13	4.25" HSA w/ SS Sampler	yes	IWT plant area
			3.0-4.5	13			
			4.5-6.0	9,13			
EDI_II86	WT-11	10	2.0-4.0	9,13	4.25" HSA w/ SS Sampler	yes	IWT plant area
			4.0-6.0	9,13			
			6.0-8.0	13			

RACER0060484

Table 2-1. *oil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
EDI_II86	WT-12	10	4.0-6.0	9,13	4.25" HSA w/ SS Sampler	yes	IWT plant area
			6.0-8.0	13			
EDI_II86	WT-13	10	2.0-4.0	9,13	4.25" HSA w/ SS Sampler	yes	IWT plant area
			4.0-6.0	13			
EDI_II86	WT-14	10.2	1.0-2.0	9,13	4.25" HSA w/ SS Sampler	yes	IWT plant area
			6.0-8.0	13			
			8.0-10.0	13			
EDI_II86	WT-15	20	2.0-3.5	9,13	4.25" HSA w/ SS Sampler	yes	IWT plant area
			4.0-5.5	13			
			5.5-7.0	9,13			
EDISS86	T-1	10	-	-	3.75" HSA w/ SS Sampler	yes	thinner area
EDISS86	T-2	8	-	-	3.75" HSA w/ SS Sampler	yes	thinner area
EDISS86	T-3	10	-	-	3.75" HSA w/ SS Sampler	yes	thinner area
EDISS86	T-4	8.5	-	-	3.75" HSA w/ SS Sampler	yes	thinner area
EDISS86	T-5	10	-	-	3.75" HSA w/ SS Sampler	yes	thinner area
EDISS86	T-6	14	-	-	3.75" HSA w/ SS Sampler	yes	thinner area
EDISS86	T-7	10	-	-	3.75" HSA w/ SS Sampler	yes	thinner area
EDISS86	T-8	11	-	-	3.75" HSA w/ SS Sampler	yes	thinner area
EDISS86	T-9	8.5	-	-	3.75" HSA w/ SS Sampler	yes	thinner area
EDISS86	T-10	7	-	-	3.75" HSA w/ SS Sampler	yes	thinner area
EDISS86	T-11	15	4.0-6.0	10	2.25" HSA w/ SS sampler	yes	thinner area
			8.0-10.0	10			
			10.0-12.0	10			
			12.0-14.0	10			
			14.0-15.0	10			
EDISS86	T-13	15	1.0-3.0	10	2.25" HSA w/ SS sampler	yes	thinner area
			3.0-5.0	10			
			5.0-7.0	10			
			7.0-9.0	10			
			9.0-11.0	10			
			11.0-13.0	10			
			13.0-15.0	10			
EDISS86	T-15	15	1.0-3.0	10	2.25" HSA w/ SS sampler	yes	thinner area
			3.0-5.0	10			
			5.0-7.0	10			
			7.0-9.0	10			
			9.0-11.0	10			
			11.0-13.0	10			
			13.0-15.0	10			

RACER0060485

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
EDISS86	T-16	15	0.8-2.8	10	2.25" HSA w/ SS sampler	no	thinner area
			2.8-4.8	10			
			5.0-7.0	10			
			7.0-9.0	10			
			9.0-11.0	10			
			11.0-13.0	10			
			13.0-15.0	10			
EDISS86	T-18A	3	2.0-3.0	10	2.25" HSA w/ SS sampler	no	thinner area
EDISS86	T-18B	15	1.0-3.0	10	2.25" HSA w/ SS sampler	yes	thinner area
			3.0-5.0	10			
			5.0-7.0	10			
			7.0-9.0	10			
			9.0-11.0	10			
			11.0-13.0	10			
			13.0-15.0	10			
EDISS86	T-21	15	1.0-3.0	10	2.25" HSA w/ SS sampler	yes	thinner area
			3.0	10			
			4.0-6.0	10			
			6.0-8.0	10			
			10.0-12.0	10			
			12.0-14.0	10			
			14.0-16.0	10			
EDISS86	T-23	15	1.0-3.0	10	2.25" HSA w/ SS sampler	no	thinner area
			3.0-5.0	10			
			5.0-7.0	10			
			7.0-9.0	10			
			9.0-11.0	10			
			11.0-13.0	10			
			13.0-15.0	10			
EDISS86	T-24	15	1.0-3.0	10	2.25" HSA w/ SS sampler	yes	thinner area
			3.0-5.0	10			
			9.0-11.0	10			
			12.0-15.0	10			
EDISS86	T-25	15	4.0-6.0	10	2.25" HSA w/ SS sampler	no	thinner area
			6.0-8.0	10			
			8.0-10.0	10			
			10.0-12.0	10			
			12.0-14.0	10			
			14.0-15.0	10			

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
EDISS86	T-26	15	1.0-3.0	10	2.25" HSA w/ SS sampler	yes	thinner area
			3.0-5.0	10			
			5.0-7.0	10			
			7.0-9.0	10			
			9.0-11.0	10			
			11.0-13.0	10			
			13.0-15.0	10			
EDISS86	T-29	15	1.0-3.0	10	2.25" HSA w/ SS sampler	yes	thinner area
			3.0-5.0	10			
			5.0-7.0	10			
			7.0-9.0	10			
			9.0-11.0	10			
			11.0-13.0	10			
			13.0-15.0	10			
EDISS86	T-30	15	1.0-3.0	10	2.25" HSA w/ SS sampler	no	thinner area
			3.0-5.0	10			
			5.0-7.0	10			
			7.0-9.0	10			
			9.0-11.0	10			
			11.0-13.0	10			
			13.0-15.0	10			
EDISS86	T-33A	8	3.0-5.0	10	2.25" HSA w/ SS sampler	no	thinner area
EDISS86	T-33B	15	7.0-9.0	10	2.25" HSA w/ SS sampler	yes	thinner area
			9.0-11.0	10			
			13.0-15.0	10			
EDISS86	T-34	15	3.0-5.0	10	2.25" HSA w/ SS sampler	yes	thinner area
			5.0-7.0	10			
			7.0-9.0	10			
			9.0-11.0	10			
			11.0-13.0	10			
			13.0-15.0	10			
OBGSIM89	MW - 1D	27	--	--	HSA w/ SS sampler	yes	surface impoundment
OBGSIM89	MW - 1S	12	--	--	HSA w/ SS sampler	yes	surface impoundment
OBGSIM89	MW - 2D	30.4	--	--	HSA w/ SS sampler	yes	surface impoundment
OBGSIM89	MW - 2S	14	--	--	HSA w/ SS sampler	yes	surface impoundment
OBGSIM89	MW - 3D	31.5	--	--	HSA w/ SS sampler	yes	surface impoundment
OBGSIM89	MW - 3S	14	--	--	HSA w/ SS sampler	yes	surface impoundment
OBGSIM89	MW - 4D	36.5	--	--	HSA w/ SS sampler	yes	surface impoundment
OBGSIM89	MW - 4S	14	--	--	HSA w/ SS sampler	yes	surface impoundment
OBGSIM89	MW - 5D	36.5	--	--	HSA w/ SS sampler	yes	surface impoundment
OBGSIM89	MW - 5S	14	--	--	HSA w/ SS sampler	yes	surface impoundment

Table 2-1. *oil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
IS_IRMa	B-1	12	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
			10.0-12.0	3			
IS_IRMa	B-2	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-3	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-4	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-5	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-6	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-7	10	4.0-6.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-8	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-9	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			8.0-10.0	3			
IS_IRMa	B-10	12	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
			10.0-12.0	3			
IS_IRMa	B-11	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
IS_IRMa	B-12	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-13	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-14	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-15	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			4.0-6.0	3			
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMa	B-16	10	2.0-4.0	3	2.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
			6.0-8.0	3			
			8.0-10.0	3			
IS_IRMb	B-17	11	5.0-7.0	11,12	4.25" HSA w/ SS sampler	no	Interceptor Sewer IRM Sampling
IS_IRMb	B-18	11	5.0-7.0	11		no	Interceptor Sewer IRM Sampling
			7.0-9.0	11			
			9.0-11.0	11	4.25" HSA w/ SS sampler		
IS_IRM	LC-3	14.5	1.0-1.5	3	N/A	no	Interceptor Sewer IRM Sampling
			5.0-5.5	3	N/A		
			9.5-10.0	3	N/A		
			14.0-14.5	3	N/A		
IS_IRM	LC-4	14.5	1.0-1.5	3	N/A	no	Interceptor Sewer IRM Sampling
			5.0-5.5	3	N/A		
			6.0-6.5	3	N/A		
			9.5-10.0	3	N/A		
			14.0-14.5	3	N/A		
IS_IRM	LC-5	14.5	1.0-1.5	3	N/A	no	Interceptor Sewer IRM Sampling
			6.0-6.5	3	N/A		
			8.0-8.5	3	N/A		
			14.0-14.5	3	N/A		
IS_IRM	LC-6	14.5	1.0-1.5	3	N/A	no	Interceptor Sewer IRM Sampling
			6.0-6.5	3	N/A		
			9.0-9.5	3	N/A		
			14.0-14.5	3	N/A		
IS_IRM	LC-7	14.5	1.0-1.5	3	N/A	no	Interceptor Sewer IRM Sampling
			6.0-6.5	3	N/A		
			9.0-9.5	3	N/A		
			14.0-14.5	3	N/A		

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
IS_IRM	122+00	17.0	16-17	3	N/A	no	Interceptor Sewer IRM Sampling
	123+00	18.0	17-18	3	N/A	no	Interceptor Sewer IRM Sampling
	123+40	9.0	8-9	3	N/A	no	Interceptor Sewer IRM Sampling
	123+87	9.0	8-9	3	N/A	no	Interceptor Sewer IRM Sampling
	124+00	9.0	8-9	3	N/A	no	Interceptor Sewer IRM Sampling
	124+30	9.0	8-9	3	N/A	no	Interceptor Sewer IRM Sampling
	126+40	10.0	9-10	3	N/A	no	Interceptor Sewer IRM Sampling
	127+10	10.0	9-10	3	N/A	no	Interceptor Sewer IRM Sampling
	127+40	8.0	7-8	3	N/A	no	Interceptor Sewer IRM Sampling
	129+50	10.0	7-8	3	N/A	no.	Interceptor Sewer IRM Sampling
			9-10	3	N/A	no	Interceptor Sewer IRM Sampling
	130+40	14.0	8-9	3	N/A	no	Interceptor Sewer IRM Sampling
			13-14	3	N/A	no	Interceptor Sewer IRM Sampling
	131+00	19.0	18-19	3	N/A	no	Interceptor Sewer IRM Sampling
	131+80	8.0	7-8	3	N/A	no	Interceptor Sewer IRM Sampling
IS-IRM	18+80 to 119+6	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	119+64 to 120+4	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	120+64 to 120+4	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	120+42 to 121+2	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	121+20 to 122+1	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	121+20 to 122+1	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	122+16 to 123+2	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	123+25 to 124+3	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	124+33 to 125+4	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	125+42 to 126+5	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	126+51 to 127+6	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	127+60 to 128+4	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	128+48 to 129+3	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	129+36 to 130+2	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	130+24 to 131+1	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	131+12 to 132	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
	131+12 to 132	Surface	0.0-0.5	3	N/A	no	Interceptor Sewer IRM Sampling
CRAII95	HP-4	23	1.0-2.5	3,7,21	4.25" HSA w/ SS sampler	no	Downgradient of Former Thinner Tanks
CRAII95	HP-BH-5		5.5-6.5	3,7,21	4.25" HSA w/ SS sampler	no	Downgradient of Former Thinner Tanks
CRAII95	HA-1	7	6.0-7.0	3,7,21	4.25" HSA w/ SS sampler	no	Compactor area
CRAII95	HA-2	11	10.5-11	1,2,3,5,6,21	3" Hand Auger	no	Acid/Alkali Bunker
CRAII95	HA-3	11	10.0-11.0	3,7	4.25" HSA w/ SS sampler	no	Dock Leveler Sump
CRAII95	HA-4	10.5	9.0-9.5	3,7	3" Hand Auger	no	Dock Leveler Sump
CRAII95	HA-5	7	6.0-7.0	3,7	4.25" HSA w/ SS sampler	no	Suspected PCB Oil Tank
CRAII95	HA-6	8	6.0-8.0	3,7	4.25" HSA w/ SS sampler	no	Suspected PCB Oil Tank
CRAII95	HA-7	8	7.0-8.0	1,2,3,21	4.25" HSA w/ SS sampler	no	General storage area
CRAII95	HA-8	7	5.5-7.0	1,2,3,21	4.25" HSA w/ SS sampler	no	General storage area
CRAII95	HA-9	7	6.0-7.0	5,6	4.25" HSA w/ SS sampler	no	Electoplating WWT Tanks
CRAII95	HA-10	12	10.5-12.0	5,6	4.25" HSA w/ SS sampler	no	Electroplating WWT Tanks
CRAII95	HA-11	4.5	4.0-4.6	5,6	3" Hand Auger	no	SO2 Scrubber Area

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
CRAII95	HA-12	10.5	10.0-10.5	1,2,3,6,21	3" Hand Auger	no	Former Incinerator Area
CRAII95	BH-1	16	9.0-10.0	1,2,3,5,6,21	4.25" HSA w/ SS sampler	no	Landfill
CRAII95	BH-2	16	8.0-10.0	1,2,3,5,6,21	4.25" HSA w/ SS sampler	no	Landfill
CRAII95	BH-3	28	14.0-15.5	1,2,3,5,6,21	4.25" HSA w/ SS sampler	no	Landfill
CRAII95	BH-4	5	1.0-5.0 COM	5,6	4.25" HSA w/ SS sampler	no	Cyanide Sump #1
CRAII95	BH-5	5	1.0-3.0	5,6	4.25" HSA w/ SS sampler	no	Chrome Sump #1
CRAII95	BH-6	5	1.0-2.0 COM	5,6,21	4.25" HSA w/ SS sampler	no	Chrome Sump #5
CRAII95	BH-7	5	1.0-2.0 COM	5,6,21	4.25" HSA w/ SS sampler	no	Cyanide Sump #2
CRAII95	BH-9	8	3.0-5.0 6.0-8.0	5,6 21	4.25" HSA w/ SS sampler	no	Cyanide Sump #3
CRAII95	BH-10	5	1-2 COM	5,6	4.25" HSA w/ SS sampler	no	Chrome Sump #6
CRAII95	BH-10B	5	1-2 COM	--	4.25" HSA w/ SS sampler	no	Chrome Sump #6, (offset #1)
CRAII95	BH-11	12.1	11.0-12.1	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Sump J
CRAII95	BH-12	13	11.0-12.0	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Tank Q
CRAII95	BH-13	7.4	7.0-8.0	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Sump H
CRAII95	BH-14	4	7.0-8.0	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Tank P
CRAII95	BH-14B	9	--	--	4.25" HSA w/ SS sampler	no	Hydraulic Oil Tank P (offset #1)
CRAII95	BH-15	7.4	7.0-7.4	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Sump I
CRAII95	BH-16	11	9.0-11.0	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Sump G
CRAII95	BH-17	6.8	5.0-6.8	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Tank R
CRAII95	BH-18	9	7.0-7.9	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Sump F
CRAII95	BH-19	8.4	8.0-9.0	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Sump E
CRAII95	BH-20	11	7.0-8.0	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Tank O
CRAII95	BH-21	11	8.0-9.0	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Sump A
CRAII95	BH-22	11	8.0-9.0	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Sump C
CRAII95	BH-23	7.7	7.0-7.7	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Sump D
CRAII95	BH-24	9	7.0-9.0	3,7	4.25" HSA w/ SS sampler	no	Hydraulic Oil Tank N
CRAII95	BH-24B	4.2	--	--	4.25" HSA w/ SS sampler	no	Hydraulic Oil Tank N (offset #1)
CRAII96	BH-25	5.3	3.0-5.3	3, 7	2.25" HSA w/ SS sampler	no	inside Hydraulic Oil Sump M
CRAII96	BH-26	9	5.0-7.0	3, 7	2.25" HSA w/ SS sampler	no	adjacent to Hydraulic Oil Sump B
CRAII96	BH-27	11	7.5-9.0	3,7,21	2.25" HSA w/ SS sampler	no	10' south of Hydraulic Oil Sump H
CRAII96	BH-28	11	7.5-9.0	3,7,21	2.25" HSA w/ SS sampler	no	15' north of Hydraulic Oil Sump H
CRAII96	BH-29	11	7.0-8.5	3, 7	2.25" HSA w/ SS sampler	no	3' north of Hydraulic Oil Sump M
CRAII96	BH-30	10	8.5-9.5	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-31	10	8.0-9.0	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-32	13	9.0-10.8	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-33	13	8.0-9.7	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-34	13	10.0-10.8	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-35	13	9.0-10.3	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-36	13	10.5-12.2	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-37	15	10.0-12.1	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-38	15	12.1-12.8	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-39	15	12.8-13.8	3, 7	2.25" HSA w/ SS sampler	no	Hydraulic Oil Sump I
CRAII96	BH-40	15	13.0-13.8	3, 7	2.25" HSA w/ SS sampler	no	Hydraulic Oil Sump I
CRAII96	BH-41	16	12.0-13.5	3, 7	2.25" HSA w/ SS sampler	no	Hydraulic Oil Sump J

Table 2-1. Soil Boring Installation / Sample Summary.

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
CRAII96	BH-42	7.7	7.0-7.7	3, 7	2.25" HSA w/ SS sampler	no	Hydraulic Oil Sump K
CRAII96	BH-43	17	11.0-12.5	3, 7	2.25" HSA w/ SS sampler	no	Hydraulic Oil Sump L
CRAII96	BH-44	13	--	--	2.25" HSA w/ SS sampler	no	Hydraulic Oil Sump L
CRAII96	BH-45	23	15.0-17.0	3, 7	2.25" HSA w/ SS sampler	no	Hydraulic Oil Sump L
CRAII96	BH-46	20	4.0-5.0	5	2.25" HSA w/ SS sampler	no	Former Paint Shop
			15.0-16.0	21			
CRAII96	BH-47	21	4.0-6.0	21	2.25" HSA w/ SS sampler	no	Former Paint Shop
			7.0-9.0	21			
			15.0-16.0	5			
CRAII96	BH-48	10.3	10.0-10.5	21	2.25" HSA w/ SS sampler	no	Former Paint Shop
CRAII96	BH-49	15	10.8-11.9	3, 7	2.25" HSA w/ SS sampler	no	Hydraulic Oil Tank O
CRAII96	BH-50	15	10.0-10.8	3, 7	2.25" HSA w/ SS sampler	no	Hydraulic Oil Tank O
CRAII96	BH-51	15	8.6-10.5	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-52	8.7	7.5-8.7	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-53	15	12.5-12.9	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
CRAII96	BH-54	15	12.0-12.8	3, 7	2.25" HSA w/ SS sampler	no	storm sewer
NIMOS96-S	35	7	0.0-7.0 COM	3	Geoprobe - truck mounted	no	proposed utility pole location
			1,2,3,4,5,6,7	3			
NIMOS96-S	36E	7	0.0-7.0 COM	3	Geoprobe - truck mounted	no	proposed utility pole location
			1,2,3,4,5,6,7	--			
NIMOS96-S	36C	7	0.0-7.0 COM	3	Geoprobe - truck mounted	no	proposed utility pole location
			1,2,3,4,5,6,7	--			
NIMOS96-S	36W	7	0.0-7.0 COM	3	Geoprobe - truck mounted	no	proposed utility pole location
			1,2,3,4,5,6,7	--			
NIMOS96-S	37E	7	0.0-7.0 COM	3	Geoprobe - truck mounted	no	proposed utility pole location
			1,7				
			2,3,4,5,6	3			
NIMOS96-S	37C	6	0.0-6.0 COM	3	Geoprobe - truck mounted	no	proposed utility pole location
			1,2,3,4,5	--			
			6	3			
NIMOS96-S	37W	7	0.0-7.0 COM	3	Geoprobe - truck mounted	no	proposed utility pole location
			1,7				
			2,3,4,5,6	3			
NIMOS96-S	38	7	0.0-7.0 COM	3	Geoprobe - truck mounted	no	proposed utility pole location
			1,2,3,4,5,6,7	--			
NIMOS96-S	39	7	0.0-7.0 COM	3	Geoprobe - truck mounted	no	proposed utility pole location
			1,2,3,4,7	--			
			5,6	3			
OBGTEL96	S-11	5	0.0-5.0 COM	3	Geoprobe - Manual	no	proposed utility pole location
OBGTEL96	S-12	5	0.0-5.0 COM	3	Geoprobe - Manual	no	proposed utility pole location
OBGTEL96	S-13	5	0.0-5.0 COM	3	Geoprobe - Manual	no	proposed utility pole location
SCCS_93	S#1	surface	0.0-0.5 COM	3	Trowel - Manual	no	Storage Cell Confirmation Sampling
SCCS_93	S#2	surface	0.0-0.5 COM	3	Trowel - Manual	no	Storage Cell Confirmation Sampling
SCCS_93	S#3	surface	0.0-0.5 COM	3	Trowel - Manual	no	Storage Cell Confirmation Sampling

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Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
SCCS_93	S#4	surface	0.0-0.5 COM	3	Trowel - Manual	no	Storage Cell Confirmation Sampling
SCCS_93	S#5	surface	0.0-0.5 COM	3	Trowel - Manual	no	Storage Cell Confirmation Sampling
SCCS_93	S#6	surface	0.0-0.5 COM	3	Trowel - Manual	no	Storage Cell Confirmation Sampling
SCCS_93	S#7	surface	0.0-0.5 COM	3	Trowel - Manual	no	Storage Cell Confirmation Sampling
SCCS_93	S#8	surface	0.0-0.5 COM	3	Trowel - Manual	no	Storage Cell Confirmation Sampling
SCCS_93	S#9	surface	0.0-0.5 COM	3	Trowel - Manual	no	Storage Cell Confirmation Sampling
SCCS_93	S#10	surface	0.0-0.5 COM	3	Trowel - Manual	no	Storage Cell Confirmation Sampling
OGBSRI99	MWI-1	16	--	--	4.25" HSA/ SS Sampler	yes	Southwest portion of building
OBGSRI99	MWI-2	15	--	--	4.25" HSA/ SS Sampler	yes	Adjacent to oil/water collection sump 5 line
OBGSRI99	MWI-3	16	--	--	4.25" HSA/ SS Sampler	yes	Downgradient of paint room
OBGSRI99	WT-3R	15	--	--	4.25" HSA/ SS Sampler	yes	Downgradient of oil/water collection sump 5
OGBSRI99	OBG-6D	36.1	--	--	4.25" HSA/ SS Sampler	yes	Northern property area ground water
OBGSRI99	OBG-6S	17.1	--	--	4.25" HSA/ SS Sampler	yes	Northern property area ground water
OBGSRI99	OBG-7D	36.5	--	--	4.25" HSA/ SS Sampler	yes	Northern property area ground water
OBGSRI99	OBG-7S	18.8	--	--	4.25" HSA/ SS Sampler	yes	Northern property area ground water
OGBSRI99	OBG-8D	31.6	--	--	4.25" HSA/ SS Sampler	yes	Northern property area ground water
OBGSRI99	OBG-8S	18.5	--	--	4.25" HSA/ SS Sampler	yes	Northern property area ground water
OBGSRI99	OBG-9D	31.6	--	--	4.25" HSA/ SS Sampler	yes	Northern property area ground water
OBGSRI99	OBG-9S	17.8	--	--	4.25" HSA/ SS Sampler	yes	Northern property area ground water
OGBSRI99	OBG-10D	29.1	--	--	4.25" HSA/ SS Sampler	yes	North of manufacturing building
OBGSRI99	OBG-10S	13.7	--	--	4.25" HSA/ SS Sampler	yes	North of manufacturing building
OBGSRI99	OBG-11	18.3	--	--	4.25" HSA/ SS Sampler	yes	Upgradient background monitoring well
OBGSRI99	OBG-11R	62	--	--	4.25" HSA/ SS Sampler	no	Abandoned boring
OGBSRI99	OBG-12	17.8	--	--	4.25" HSA/ SS Sampler	yes	IWT Plant Area
OBGSRI99	OBG-13	17.8	--	--	4.25" HSA/ SS Sampler	yes	IWT Plant Area
OBGSRI99	OBG-14R	23.5	--	--	4.25" HSA/ SS Sampler	no	Abandoned boring
OBGSRI99	OBG-15	12.7	--	--	4.25" HSA/ SS Sampler	yes	Southwest property area
OGBSRI99	OBG-PZ-1	21	--	--	4.25" HSA/ SS Sampler	no	Delineate thinner spill plume
OBGSRI99	OBG-PZ-2	18	--	--	4.25" HSA/ SS Sampler	no	Delineate thinner spill plume
OBGSRI99	OBG-PZ-3	20	--	--	4.25" HSA/ SS Sampler	yes	Delineate thinner spill plume
OBGSRI99	OBG-PZ-4	9	--	--	4.25" HSA/ SS Sampler	yes	Oil/water collection sump 5 line
OGBSRI99	OBG-PZ-5	10.9	--	--	4.25" HSA/ SS Sampler	yes	Oil/water collection sump 5 line
OBGSRI99	OBG-PZ-6	9.9	--	--	4.25" HSA/ SS Sampler	yes	South of oil/water collection sump 5 line
OBGSRI99	OBG-PZ-7	20	--	--	4.25" HSA/ SS Sampler	yes	Delineate thinner spill plume
OBGSRI99	OBG-PZ-8	13.1	--	--	4.25" HSA/ SS Sampler	yes	East of oil/water collection sump 5 line
OGBSRI99	OBG-TB-1	11	1 - 3 3 - 5 5 - 7 7 - 9 9 - 11	15,16,17,18,19	4.25"HSA/ 3-inch SS Sampler	no	Adjacent to oil/water collection sump 8
OBGSRI99	OBG-TB-2	15	--	--	4.25" HSA/ 2-inch SS Sampler	no	Oil/water collection sump 1 line
OBGSRI99	OBG-TB-3	13	--	--	4.25" HSA/ 3-inch SS Sampler	no	Oil/water collection sump 1 line
OBGSRI99	OBG-TB-4	13	--	--	4.25" HSA/ 3-inch SS Sampler	no	Along fire protection line

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
OBGSRI99	OBG-TB-5	12	2 - 4 4 - 6 6 - 8	15,17,18,19	4.25 " HSA/ 3-inch SS Sampler	no	Adjacent to oil/water collection sump 6
OBGSRI99	OBG-TB-6	13	--	--	4.25" HSA/ 2-inch SS Sampler	no	Oil/water collection sump 5 line
OBGSRI99	OBG-TB-12	13	5 - 7 11 - 13	15,16,17,18,19,20	4.25" HSA/ 3-inch SS Sampler	no	North of paint room
OBGSRI99	OBG-TB-13	13	7 - 9 9 - 11 15 - 17	15,16,17,18,19,20	4.25" HSA/ 3-inch SS Sampler	no	East of paint room
OBGSRI99	OBG-TB-14	12	2 - 4 4 - 6 6 - 8 8 - 10 12 - 14 14 - 16	15,17,18,19	4.25" HSA/ 3-inch SS Sampler	no	Adjacent to oil/water collection sump 3
OBGSRI99	OBG-TB-15	13	3 - 5 5 - 7 7 - 9 12 - 14 14 - 16	15,17,18,19	4.25" HSA/ 3-inch SS Sampler	no	Adjacent to oil/water collection sump 2
OBGSRI99	OBG-TB-16	9	1 - 3 5 - 7	15,17,18,19,20	4.25" HSA/ Macro-Core	no	West of paint room
OBGSRI99	OBG-TB-17	12	4 - 8 10 - 12	15,16,17,18,19,20	4.25" HSA/ Macro-Core	no	Paint room
OBGSRI99	OBG-TB-19	11	5 - 7 7 - 9 9 - 11	15,17,18,19	4.25" HSA/ 3-inch SS Sampler	no	Adjacent to oil/water collection sump 7
OBGSRI99	OBG-TB-20	6	2 - 4 4 - 6	15,17,18,19,20	4.25" HSA/ 3-inch SS Sampler	no	Southwest property storage pad area
OBGSRI99	OBG-TB-21	8	0 - 1 2 - 4 5 - 6	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Southwest property storage pad area
OBGSRI99	OBG-TB-22	8	2 - 4 6 - 8	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Southeast property area parking lot
OBGSRI99	OBG-TB-23	8	2 - 4 6 - 8	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Southeast property area parking lot
OBGSRI99	OBG-TB-24	8	2 - 4 6 - 8	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Northeast property area parking lot
OBGSRI99	OBG-TB-25	12	0 - 1 2 - 4 10 - 12	15,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Northern property area general fill area

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
OBGSRI99	OBG-TB-26	8	0 - 1 4 - 6 6 - 8	15,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Northern property area general fill area
OBGSRI99	OBG-TB-27	14	0 - 1 4 - 6 12 - 14	15,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Northern property area general fill area
OBGSRI99	OBG-TB-28	14	0 - 1 4 - 6 12 - 14	15,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Northern property area general fill area
OBGSRI99	OBG-TB-29	10	2 - 4 6 - 8	15,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Vicinity of former Surface Impdments
OBGSRI99	OBG-TB-30	10	4 - 6 6 - 8	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	IWTP - former TCE storage area
OBGSRI99	OBG-TB-31	8	2 - 4 4 - 6	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	IWTP - fuel tank area
OBGSRI99	OBG-TB-32	6	2 - 4 4 - 6	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	IWTP - fuel tank area
OBGSRI99	OBG-TB-33	6	5 - 6	19	4.25" HSA/ 2-inch SS Sampler	no	Background conditions
OBGSRI99	OBG-TB-34	10	--	--	4.25" HSA/ 2-inch SS Sampler	no	Northeast property area
OBGSRI99	OBG-TB-35	8	--	--	4.25" HSA/ 2-inch SS Sampler	no	Northeast property area
OBGSRI99	OBG-TB-36	25	6 - 8 12 - 14 22 - 24	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Northeast property area - Evaluate DNAPL
OBGSRI99	OBG-TB-37	25.2	6 - 8 22 - 24	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Northeast property area - Evaluate DNAPL
OBGSRI99	OBG-TB-38	18	4 - 6 12 - 14	15,17,18,19,20	4.25" HSA/2 -inch SS Sampler	no	IWTP TCE storage area - Evaluate DNAPL
OBGSRI99	OBG-TB-39	13.5	4 - 6 10 - 12	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Southwest property mold storage DNAPL
OBGSRI99	OBG-TB-40	12	0 - 1 4 - 6 8 - 10	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Southwest property mold storage DNAPL
OBGSRI99	OBG-TB-41	36	0 - 2 6 - 8 10 - 12 34 - 36	15,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Evaluate DNAPL near Surface Impndmt #1
OBGSRI99	OBG-TB-42	34	0 - 1 6 - 8 10 - 12 32 - 34	15,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	Evaluate DNAPL near Surface Impndmt #1
OBGSRI99	OBG-TB-43	6	2 - 4 4 - 6	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	IWTP - fuel tank area
OBGSRI99	OBG-TB-44	8	2 - 4 6 - 8	15,17,18,19,20	4.25" HSA/ 2-inch SS Sampler	no	IWTP - fuel tank area

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
OBGSRI99	OBG-TB-45	8	0 - 1 4 - 6 6 - 8	17,18	4.25" HSA/ 2-inch SS Sampler	no	Thinner tanks area
OBGSRI99	OBG-TB-46	8	0 - 1 4 - 6 6 - 8	17,18	4.25" HSA/ 2-inch SS Sampler	no	Thinner tanks area
OBGSRI99	OBG-TB-47	8	0 - 1 2 - 4 6 - 8	17,18	4.25" HSA/ 2-inch SS Sampler	no	Thinner tanks area

Notes:

(1)	RCRA Metals	Arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver USEPA Test Methods 6010 and 7470
(2)	SVOCs	USEPA Test Method 8270
(3)	PCBs	USEPA Test Method 8080
(4)	Mercury	USEPA Test Method 7470
(5)	Metals	USEPA Test Method 6010
(6)	Cyanide	USEPA Test Method 9010
(7)	Petroleum Hydrocarbon Scan	USEPA Test Method 310-13
(8)	PCBs	USEPA Test Method 608
(9)	PCBs	USEPA Test Method 600/4-82-057
(10)	VOCs	Standard Methods 16th Edition or Methods for Chemical Analysis of Water and Wastes, USEPA, 1983
(11)	Chromium	USEPA Toxic Characteristic Leaching Procedure
(12)	Waste characterization	USEPA Priority Pollutants, ash, heat of combustion
(13)	oil & grease	
(14)	WWT	wastewater treatment
(15).	VOCs	USEPA Test Method 8021
(16)	VOCs	USEPA Test Method 8260B
(17)	SVOCs	USEPA Test Method 8270C
(18)	PCBs	USEPA Test Method 8082
(19)	Site-related metals	USEPA Test Method 6010B; arsenic, chromium, copper, lead, nickel, and zinc
(20)	Total Cyanide	USEPA Test Method 9010B/9014
(21)	VOCs	USEPA Test Method 8240

Key:

EDIHI85	EDI Engineering & Science, Inc. Hydrogeological Investigation, September 1985
EDI_II86	EDI Engineering & Science, Inc. Phase II Hydrogeological Investigation, February 1986
EDISS86	EDI Engineering & Science Solvent Spill Hydrogeological Investigation, April 1986
IS_IRMa	O'Brien & Gere Engineers, Inc. Letter from Thomas K. Pelis, P.E., to William E. Kochem, Jr. (General Motors), May 25,1990
IS_IRMb	O'Brien & Gere Engineers, Inc. Letter from Thomas K. Pelis, P.E., to William E. Kochem, Jr. (General Motors), January 11, 1991

RACER0060496

Table 2-1. *Soil Boring Installation / Sample Summary.*

Investigation	Boring ID	Boring epth (ft bgs	Intervals Sampled (ft bgs)	Analyses	Installation / Sampling Method	Monitoring Well Installed	Comments
	SCCS_93	O'Brien & Gere Engineers, Inc.					
			Storage Cell Confirmation Sampling - Addendum Report - Interim Remedial Measure Ley Creek Relief Interceptor Area, June 1994.				
	CRAII95	Conestoga-Rovers & Associates					
			Phase II ESA (1995)				
	CRAII96	Conestoga-Rovers & Associates					
			Phase II ESA (1996)				
	NIMO96	Niagara Mohawk Power Corporation					
			Factory Ave. Electric Projects PCB Sampling and Analysis Report, May 1996				
	OBGTEL	O'Brien & Gere Engineers, Inc.					
			Memo from James R. Fitch Jr. regarding proposed telephone pole location PCB soil sampling, May 30, 1996.				
	OBGSRI99	O'Brien & Gere Engineers, Inc.					
			1999 Supplemental Remedial Investigation Sampling Activities				

RACER0060497

Table 2-2. *Phase II ESA Soil Boring Summary,*

PAOC			August 1995 Soil Borings	April 1996 Soil Borings
#1	Abandoned underground oil sumps and tanks			
		Sump A	BH-21	--
		Sump B	--	BH-26
		Sump C	BH-22	--
		Sump D	BH-23	--
		Sump E	BH-19	--
		Sump F	BH-18	--
		Sump G	BH-16	--
		Sump H	BH-13	BH-27, BH-28
		Sump I	BH-15	BH-39, BH-40
		Sump J	BH-11	BH-41
		Sump K		BH-42
		Sump L		BH-43, BH-44, BH-45
		Sump M		BH-25, BH-29, BH-30
		Tank N	BH-24	--
		Tank O	BH-20	BH-49, BH-50
		Tank P	BH-14 (offset)	--
		Tank Q	BH-12	--
		Tank R	BH-17	--
#2	Former PCB Oil USTs		HA-5, HA-6	--
#3	Former thinner tanks		HP-BH-5, HP-4	--
#4	Electroplating wastewater treatment tanks		HA-9, HA-10	--
#5	Former liquid waste incineration area		HA-12	--
#6	Hydrochloric acid spill area		--	--
#7	On-site landfill		BH-1, BH-2, BH-3	
#8	Acid/alkali bunker		HA-2	
#9	SO_2 scrubber area		HA-11	
#10	General storage area		HA-7, HA-8	
#11	Dock leveler sumps in the east and west receiving docks		HA-3, HA-4	
#12	Compactor area		HA-1	

Table 2-2. *Phase II ESA Soil Boring Summary.*

PAOC		August 1995 Soil Borings	April 1996 Soil Borings
#13	Sumps in former plating area		
	Sump 1	BH-4	
	Sump 3	BH-9	
	Sump 4	BH-5	
	Sump 5	BH-6	
	Sump 6	BH-10 (offset)	
	Sump 7	BH-7	
#14	Former paint shop	BH-7, BH-9	BH-46, BH-47, BH-48
#15	Stormwater sewer trench		BH-31, BH-32, BH-33, BH-34, BH-35, BH-36, BH-37, BH-38, BH-51, BH-52, BH-53, BH-54

Table 2-3. *Ground Water Monitoring Well Specifications.*

Investigation	Well ID	Installation Date	Casing Elevation (ft)	Ground Elevation (ft)	Screened Interval (ft bgs)	Well Depth (ft bgs)	Notes
EDIHI85	P - 1	05/15/85	388.6	388.6	3.5-8.5	9	(A)
EDIHI85	P - 2	05/15/85	386.05	386.3	5.5-10.5	11	(E)
EDIHI85	P - 3	05/15/85	385.59	385.59	5.5-10.5	11	(A)
EDIHI85	P - 4	05/13/85	380.5	380.5	5-10	10	(A)
EDIHI85	P - 5	05/14/85	386.8	387.12	8.5-13.5	15	(E)
EDIHI85	P - 6	05/10/85	383.84	383.84	9-14	19	(A)
EDIHI85	P - 7	05/15/85	378.08	378.08	5-10	10	(A)
EDIHI85	P - 8	05/16/85	392.53	392.53	4-9	10	(A)
EDIHI85	P - 9	05/13/85	387.41	387.41	5-10	10	(E)
EDIHI85	P - 10	05/14/85	381.61	381.61	9-14	14	(A)
EDIHI85	P - 11	05/23/85	380.85	380.85	8-13	13	(A)
EDIHI85	P - 12	05/23/85	381.72	381.72	3-8	10	(A)
EDIHI85	P - 13	05/23/85	396.12	396.12	8-13	13	(A)
EDIHI85	P - 14	05/29/85	395.47	395.47	4.5-9.5	11	(A)
EDIHI85	W - 1S	05/23/85	391.03	388.45	12.5-17.5	17.5	(E)
EDIHI85	W - 1D	05/22/85	390.59	388.34	20.5-30.5	35	(E)
EDIHI85	W - 2S	05/20/85	381.38	381.38	4-9	10	(A)
EDIHI85	W - 2D	05/20/85	381.39	381.39	9.5-19.5	25	(A)
EDIHI85	W - 3S	05/20/85	383.96	383.96	7.7-12.7	13	(A)
EDIHI85	W - 3D	05/20/85	383.97	383.97	13.5-23.5	28	(A)
EDIHI85	W - 4S	05/16/85	400.42	400.42	6-11	11	(A)
EDIHI85	W - 4D	05/16/85	400.21	400.21	13-23	24.5	(A)
EDIHI85	W - 5S	05/17/85	381.43	381.43	5.5-10.5	12.5	(A)
EDIHI85	W - 5D	05/16/85	381.52	381.52	18.3-28.3	33	(A)
EDIHI85	W - 6S	05/24/85	383.21	383.67	12.5-17.5	18	(E)
EDIHI85	W - 6D	05/23/85	383.54	384	18.5-28.5	36	(E)
EDIHI85	W - 7S	05/28/85	384.36	384.36	7-12	12	(C)
EDIHI85	W - 7D	05/22/85	383.4	383.4	22-32	41.5	(C)
EDIHI85	W - 8S	05/22/85	379.29	379.29	3-8	8	(A)
EDIHI85	W - 8D	05/21/85	379.39	379.39	20-30	36	(A)
EDIHI85	W - 9S	05/22/85	377.81	377.81	5-10	10	(A)
EDIHI85	W - 9D	05/21/85	377.91	377.91	18.5-28.5	36	(A)
EDIHI85	U - 1S	06/04/85	396.62	396.79	6-11	11	(E)
EDIHI85	U - 1D	06/03/85	396.64	396.85	11-21	23	(E)
EDIHI85	U - 2	06/04/85	400.07	400.07	8-13	16.5	(A)
EDIHI85	WT - 1	05/16/85	395.83	395.83	10-15	15	(A)
EDIHI85	WT - 3	05/16/85	387.2	387.2	5.1-10.1	11	(A)
EDI_II86	WT-6	12/09/85	384.37	384.37	6.7-11.7	11.5	
EDI_II86	WT-7	12/04/85	383.58	383.58	10.2-15.2	19	
EDI_II86	WT-8	12/06/85	382.63	382.63	4.2-9.2	9.5	
EDI_II86	WT-9	12/07/85	384.28	384.28	6.7-11.7	12	
EDI_II86	W-10-S	12/09/85	385.23	385.23	5.7-10.7	11	
EDI_II86	W-10-D	12/09/85	385.22	385.22	12.2-22.4	22.5	
EDI_II86	W-11-S	12/07/85	383.36	383.62	6.7-11.7	12	(E)
EDI_II86	W-11-D	12/07/85	383.41	383.53	13.2-23.4	24	(E)
EDI_II86	WT-10	12/11/85	394.5	394.5	5.2-10.2	18.5	
EDI_II86	WT-11	12/12/85	394.66	394.66	3.7-8.7	8.7	
EDI_II86	WT-12	12/10/85	392.55	392.55	4.2-9.2	8	(A)
EDI_II86	WT-13	12/10/85	391.69	391.69	3.2-8.2	8	(A)
EDI_II86	WT-14	12/10/85	395.72	395.72	5.2-10.2	10	(A)

Table 2-3. *Ground Water Monitoring Well Specifications.*

Investigation	Well ID	Installation Date	Casing Elevation (ft)	Ground Elevation (ft)	Screened Interval (ft bgs)	Well Depth (ft bgs)	Notes
EDI_II86	WT-15	12/11/85	395.83	395.83	4.2-9.2	9.5	(A)
EDISS86	T - 1	04/08/85	391.02	391.02	4.7-9.7	10	(D)
EDISS86	T - 2	04/08/85	389.15	389.15	3-8	8	(D)
EDISS86	T - 3	04/08/85	387.31	387.31	0-5	10	(D)
EDISS86	T - 4	04/08/85	388.21	388.21	0.75-5.75	8.5	(D)
EDISS86	T - 5	04/08/85	391.01	391.01	4.7-9.7	10	(D)
EDISS86	T - 6	04/05/85	395.71	395.71	8.1-13.1	14	(D)
EDISS86	T - 7	04/08/85	393.81	393.81	5-10	10	(D)
EDISS86	T - 8	04/05/85	387.65	387.65	1.5-6.5	11	(D)
EDISS86	T - 9	04/09/85	387.11	387.11	0-5	8.5	(D)
EDISS86	T - 10	04/09/85	387.38	387.38	0-5	7	
EDISS86	T - 11	03/31/86	387.49	387.49	4.7-9.7	15	
EDISS86	T - 13	03/27/86	387.37	387.37	4.6-9.6	15	
EDISS86	T - 15	03/24/86	388.07	388.07	4.7-9.7	15	
EDISS86	T - 18	03/26/86	387.46	387.46	5.4-10.4	15	
EDISS86	T - 21	03/25/86	387.68	387.68	8.45-13.45	15	
EDISS86	T - 24	03/31/86	388.15	388.15	5.75-10.75	15	
EDISS86	T - 26	03/27/86	386.7	386.7	5.6-10.6	15	
EDISS86	T - 29	03/28/86	387.73	387.73	5.75-10.75	15	
EDISS86	T - 33B	03/28/86	386.75	386.75	5.75-10.75		
EDISS86	T - 34	03/29/86	386.71	386.71	7.7-12.7	15	
OBGSIMR	MW - 1D	09/17/88	383.77	381.3	22.0-27.0	27	
OBGSIMR	MW - 1S	09/19/88	383.74	381.2	7.0-12.0	12	
OBGSIMWP	MW - 1S(1)	09/07/91	384	381.6	7.0-12.0	12	
OBGSIMR	MW - 2D	09/20/88	386.19	385.1	24.0-29.0	29	
OBGSIMR	MW - 2S	09/20/88	386.95	385	8.0-13.0	13	
OBGSIMR	MW - 3D	09/21/88	383.61	381.2	25.5-30.5	30.5	
OBGSIMR	MW - 3S	09/21/88	384.06	381.2	4.0-14.0	14	
OBGSIMWP	MW - 3S(2)	06/10/91	383.7	381.4	4.0-14.0	14	
OBGSIMR	MW - 4D	09/22/88	385.6	383.8(4)	30.0-35.0	35	
OBGSIMR	MW - 4S	09/22/88	386.16	384.0(4)	4.0-14.0	14	
OBGAGWR	MW - 4S(3)	6/95	385.8	384	5.0-15.0		
OBGSIMR	MW - 5D	09/22/88	383.02	381.5(4)	30.5-35.0	35	
OBGSIMR	MW - 5S	09/22/88	383.81	381.6(4)	4.0-14.0	14	
OBGLCHI	OBG-1	11/24/86	379.18	376.67	4.8-9.8	9.8	
OBGLCHI	OBG-2	11/21/86	378.34	375.34	4-9	9	
OBGLCHI	OBG-3	11/20/86	379.38	376.76	4.75-9.75	9.75	
OBGLCHI	OBG-4	11/20/86	379.54	377.24	5.39-10.39	10.4	
OBGLCHI	OBG-5	11/20/86	379.07	376.74	4.79-9.79	9.8	
OBGLCHI	OBG-6	11/10/86	381.52	379.15	13.1-18.1	18.1	
OBGLCHI	OBG-7A	11/21/86	378.69	376.12	4.6-9.6	9.6	
OBGLCHI	OBG-7B	11/21/86	379.4	376.96	4.4-9.4	9.4	
OBGLCHI	OBG-7C	11/21/86	380.7	378.08	4.9-9.9	9.9	
OBGLCFI	MW-8	09/13/88	381.66	379.9	5.2-15.2	15.2	
OBGLCFI	MW-9	09/13/88	375.36	373.6	5.1-15.1	15.1	
OBGLCFI	MW-10	09/13/88	379.24	377.4	5.1-15.1	15.1	
OBGLCFI	MW-11	09/14/88	380.26	378.4	5.1-15.1	15.1	

Table 2-3. *Ground Water Monitoring Well Specifications.*

Investigation	Well ID	Installation Date	Casing Elevation (ft)	Ground Elevation (ft)	Screened Interval (ft bgs)	Well Depth (ft bgs)	Notes
OBGLCFI	MW-12	09/14/88	382.89	381.2	7.1-17.1	17.1	
OBGLCFI	MW-13	09/14/88	379.83	378	6.2-11.2	11.2	
OBGLC93	OBG-3D	07/24/92	379.11	376.5	30-35	35	
OBGLC93	OBG-9D	07/21/92	377.56	374.2	26.9-31.9	31.9	
OBGSRI99	OBG-6D	09/28/99	381.2	378.58	31.13 - 36.13	36.1	(E)
OBGSRI99	OBG-6S	09/29/99	381.35	378.61	7.06 - 17.06	17.1	(E)
OBGSRI99	OBG-7D	09/29/99	383.58	381.44	31.5 - 36.5	36.5	(E)
OBGSRI99	OBG-7S	09/30/99	383.74	381.31	8.78 - 18.78	18.8	(E)
OBGSRI99	OBG-8D	09/30/99	381.33	379	26.57 - 31.57	31.6	(E)
OBGSRI99	OBG-8S	10/01/99	381.35	378.74	8.52 - 18.52	18.5	(E)
OBGSRI99	OBG-9D	10/01/99	382.34	379.63	26.55 - 31.55	31.6	(E)
OBGSRI99	OBG-9S	10/04/99	382.12	379.47	7.83 - 17.83	17.8	(E)
OBGSRI99	OBG-10D	10/05/99	381.8	382.22	24.09 - 29.09	29.1	(E)
OBGSRI99	OBG-10S	10/05/99	382	382.28	3.66 - 13.66	13.7	(E)
OBGSRI99	OBG-11	10/06/99	404.52	401.93	8.28 - 18.28	18.3	(E)
OBGSRI99	OBG-12	10/06/99	395.89	396.03	5.54 - 15.54	15.5	(E)
OBGSRI99	OBG-13	10/08/99	395.2	395.69	7.84 - 17.84	17.8	(E)
OBGSRI99	OBG-15	10/05/99	391.4	391.79	12.74 - 4.74	12.7	(E)
OBGSRI99	MWI-1	07/14/99	391.72	392.1	3.5 - 13.5	13.5	(E)
OBGSRI99	MWI-2	07/15/99	391.55	392.06	3.75 - 13.75	13.8	(E)
OBGSRI99	MWI-3	07/15/99	391.74	392.09	4.75 - 14.75	14.8	(E)
OBGSRI99	WT-3R	07/15/99	387.8	388.08	2.6 - 12.6	12.6	(E)
OBGSRI99	OBG-PZ-3	07/07/99	391.48	391.96	10 - 20	20	(E)
OBGSRI99	OBG-PZ-4	07/09/99	391.77	392.12	4 - 9	9	(E)
OBGSRI99	OBG-PZ-5	07/12/99	391.66	392.04	0.87 - 10.87	10.9	(E)
OBGSRI99	OBG-PZ-6	07/12/99	391.8	392.09	4.92 - 9.92	9.9	(E)
OBGSRI99	OBG-PZ-7	07/13/99	391.68	392	10 - 20	20	(E)
OBGSRI99	OBG-PZ-8	07/19/99	391.71	392.01	3.05 - 13.05	13.1	(E)

Notes:
(A) Casing elevation is based on curb box rim.
(B) Casing elevation is based on top of riser pipe hinge cap.
(C) Casing elevation is based on top of concrete.
(D) Based on information in report.
(Monitoring well installation records not located.)
(E) Elevation data based on November 1999 survey.

(1) Replaces well MW-1S
(2) Replaces well MW-3S
(3) Replaces well MW-4S
(4) Updated Ground Surface Elevations -
O'Brien & Gere Engineers, Inc. Report - Annual Ground Water Quality Assessment, February 1996
bgs below ground surface

Key:

EDIHI85 EDI Engineering & Science, Inc.
Hydrogeological Investigation, September 1985
EDI_II86 EDI Engineering & Science, Inc.

Table 2-3. *Ground Water Monitoring Well Specifications.*

Investigation	Well ID	Installation Date	Casing Elevation (ft)	Ground Elevation (ft)	Screened Interval (ft bgs)	Well Depth (ft bgs)	Notes

EDISS86 EDI Engineering & Science, Inc.
Phase II Hydrogeological Investigation, February 1986

OBGSIMR O'Brien & Gere Engineers, Inc.
Solvent Spill Hydrogeological Investigation and Remedial Action Plan, April 1986

OBGLCHI O'Brien & Gere Engineers, Inc.
Report - Surface Impoundment Post Closure Monitoring Program, March 1989

OBGLCFI O'Brien & Gere Engineers, Inc.
Report - Hydrogeological Investigation of Fill Area Along Ley Creek, April 1987

OBGSIMWP O'Brien & Gere Engineers, Inc.
Field Investigation - Ley Creek Dredged Material Area, July 1989

OBGLC93 O'Brien & Gere Engineers, Inc.
Work Plan - Surface Impoundment Post Closure Ground Water Monitoring Plan, April 1988, updated March 1992

OBGAGWR O'Brien & Gere Engineers, Inc.
Report - Ley Creek Remedial Investigation, September 1993

OBGSRI99 O'Brien & Gere Engineers, Inc.
Report - Annual Ground Water Quality Assessment, February 1996

Supplemental Remedial Investigation, 1999

Table 2-6. *Ley Creek Surface Sater Sampling Summary.*

Sample identification	Sample location	Analyses
Low flow sampling event		
Downstream Samples		
GM98-SW1 GM98-SW1MS GM98-SW1MSD	Ley Creek: 80 ft upstream of Route 11 bridge	TCL/TAL
GM98-SW2	Ley Creek: 40 ft downstream of Outfall 003.	VOCs, SVOCs, PCBs, heavy metals, CN
GM98-SW3	Ley Creek: 60 ft down stream of Outfall 004	VOCs, SVOCs, PCBs, heavy metals, CN
Upstream Samples		
GM98-SW4	Ley Creek: 120 ft upstream of Townline Road bridge	VOCs, SVOCs, PCBs, heavy metals, CN
GM98-SW5	Ley Creek North Branch Ley Creek: 75 ft upstream of confluence with South Branch.	VOCs, SVOCs, PCBs, heavy metals, CN
GM98-SW6 GM98-SW6-DUP	Sanders Creek: 100 ft upstream of confluence with South Branch	VOCs, SVOCs, PCBs, heavy metals, CN
GM98-SW7	Ley Creek South Branch: 60 ft upstream of Sanders Creek	VOCs, SVOCs, PCBs, heavy metals, CN
High Flow Sampling Event		
Downstream samples		
GM99-SW-1 GM99-SW1MS GM99-SW1MSD GM99-FD1	Ley Creek: 80 ft upstream of Route 11 bridge.	TCL/TAL: VOCs (8260), SVOCs (8270), PCB/Pesticide (8081/8082), metals, cyanide
GM99-SW2 GM99-SW2MS* GM99-SW2MSD* GM99-FD2* QC Trip Blank for VOCs	Ley Creek: 40 ft downstream of Outfall 003	VOCs, SVOCs, PCBs, heavy metals, cyanide
GM99-SW3	Ley Creek: 60 ft downstream of Outfall 004	VOCs, SVOCs, PCBs, heavy metals, cyanide
Upstream samples		
GM99-SW4	Ley Creek: 120 ft upstream of Townline Road bridge	VOCs, SVOCs, PCBs, heavy metals, cyanide
GM99-SW5	North Branch Ley Creek: 75 ft upstream of Ley Creek confluence	VOCs, SVOCs, PCBs, heavy metals, cyanide
GM99-SW6	Sanders Creek: 100 ft upstream of confluence with South Branch Ley Creek	VOCs, SVOCs, PCBs, heavy metals, cyanide

Table 2-6. *Ley Creek Surface Sater Sampling Summary.*

Sample identification	*Sample location*	*Analyses*
GM99-SW7 QC trip blank for VOCs	Ley Creek South Branch Ley Creek – 60 ft upstream of Sanders Creek confluence	VOCs, SVOCs, PCBs, heavy metals, cyanide

Notes: MS = matrix spike
MSD = matrix spike duplicate
FD = field duplicate
* = VOCs (8021) analysis only
TCL/TAL = Target Compound List/Target Analyte List; VOCs by USEPA Method 8260A, SVOCs by USEPA Method 8270C, PCBs USEPA Method 8082, Pesticides by USEPS Method 8081A, metals by USEPA Methods 6010B and 7470A, and cyanide by USEPA Method 9010B/9014.
PCB = Polychlorinated biphenyl USEPA Method 8082
VOC = Volatile organic compound by USEPA Method 8260A
SVOC = Semivolatile organic compound by USEPA Method 8270
QC = Quality control
Heavy metals = Sb, As, Cr, Cu, Pb, Hg, Ni, Se, Zn

Source: O'Brien & Gere Engineers, Inc.

Table 2-7. *Ley Creek sediment sampling summary.*

Sample identification	Sample Location	Analytes
Downstream surface (0 - 6 inch) samples		
GM98-SED1, MS, MSD	Ley Creek: 80 ft upstream of Route 11 bridge, 3' from south shore	TCL/TAL, TOC, PCDDs/PCDFs
GM98-SED2	Ley Creek: 450 ft upstream of SED1, on north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED3	Ley Creek: 50 ft west of LeMoyne Ave, 5' from south shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED4	Ley Creek: 500 ft east of LeMoyne Ave, 3' from north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED5	Ley Creek: 300 ft east of SED4, 6' from north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED6	Ley Creek: 400' east of SED5, 5' from south shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED7A	Ley Creek: west end of Diamond Roofing Building, 6' from south shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC, PCDDs/PCDFs
GM98-SED8	Ley Creek: opposite Ford repair shop, 5' from north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED9	Ley Creek: opposite red barn of Salina Garage, 3' from north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED10	Ley Creek: 700' east of SED9, along north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED11A	Ley Creek: 150 ft east of overhead electrical lines, on north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC, PCDDs/PCDFs
GM98-SED12	Ley Creek: 500' east of SED11, on north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED13	Ley Creek: slight bend to south, along north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED14	Ley Creek: 500' east of SED13, on south shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED15	Ley Creek: 700' east of SED14, on north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED16	Ley Creek: 100' west of Outfall 003, on south shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC, PCDDs/PCDFs
Upstream surface (0 - 6 inch) samples		
GM98-SED17	Ley Creek: 100' east of Townline Rd, on north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC, PCDDs/PCDFs

Table 2-7. *Ley Creek sediment sampling summary.*

Sample identification	Sample Location	Analytes
GM98-SED17 MS GM98-SED17 MSD	Ley Creek: 100' east of Townline Rd, on north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED18A	Ley Creek: 50' east of SED17, on south bank	VOCs, SVOCs, PCBs, heavy metals, CN, TOC, PCDDs/PCDFs
GM98-SED19	Ley Creek: eastern corner of white building, on north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC, PCDDs/PCDFs
GM98-SED20A	Ley Creek: 50' west of North & South Branch confluence	VOCs, SVOCs, PCBs, heavy metals, CN, TOC, PCDDs/PCDFs
GM98-SED21A	Ley Creek North Branch: 150' east of confluence with South Branch, on north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED22	Ley Creek North Branch: 300' east of SED21, on south shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED23	Ley Creek South Branch: 50' upstream of confluence with Sanders Creek	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED24	Ley Creek South Branch: 30' downstream of small waterfall, along east shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED25	Sanders Creek: 75' east of confluence with South Branch, on south shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED25 DUP	Sanders Creek: 75' east of confluence with South Branch, on south shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED26	Sanders Creek: 50' east of water sample location, on south shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
Downstream subsurface (6 - 12 inch) samples		
GM98-SED1B	Ley Creek: 80 ft upstream of Route 11 bridge	TCL/TAL, TOC, PCDDs/PCDFs
GM98-SEC7B	Ley Creek: west end of Diamond Roofing Building, 6' from south shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC
GM98-SED11B	Ley Creek: 150 ft east of overhead electrical lines, on north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC, PCDDs/PCDFs
Upstream subsurface (6 - 12 inch) samples		
GM98-SED18B	Ley Creek: 50' east of SED17, on south bank	VOCs, SVOCs, PCBs, heavy metals; CN, TOC, PCDDs/PCDFs
GM98-SED20B	Ley Creek: 50' west of North & South Branch confluence	VOCs, SVOCs, PCBs, heavy metals, CN, TOC, PCDDs/PCDFs
GM98-SED21B	Ley Creek North Branch: 150' east of confluence with South Branch, on north shore	VOCs, SVOCs, PCBs, heavy metals, CN, TOC

Table 2-7. *Ley Creek sediment sampling summary.*

Sample identification	Sample Location	Analytes

Notes: TCL/TAL - Target Compound List/Target Analyte List; VOCs by EPA Method 8260A, SVOCs by EPA Method 8270C, PCBs by EPA Method 8082, pesticides by EPA Method 8081A, metals by EPA Methods 6010B and 7470A, and cyanide by EPA Method 9010B/9014.

TOC - total organic carbon by Lloyd Kahn Method

PCDDs/PCDFs - polychlorinated dibenzodioxins and polychlorinated dibenzofurans by EPA Method 8290

VOCs - volatile organic compounds by EPA Method 8021B

SVOCs - semivolatile organic compounds by EPA Method 8270C

PCBs - polychlorinated biphenyls by EPA Method 8082

heavy metals - antimony, arsenic, chromium, copper, lead mercury, nickel, selenium and zinc by EPA Methods 6010B and 7470A

CN - cyanide by EPA Method 9010B/9014

Source: O'Brien & Gere Engineers, Inc

Table 2-8. *Fish Sampling Information - 1992 Ley Creek PCB Dredging Site RI*,

FISH COLLECTED FROM LEY CREEK ON JULY 16, 1992					
Species	#	Length (mm)	Mass (g)	Portion Analyzed	Purpose
UPSTREAM					
Pumpkinseed	1	95	11	EP	HHRA
Pumpkinseed	1	77	8.5	EP	HHRA
Pumpkinseed	1	84	9.5	EP	HHRA
Mudminnow	1	86	6	-	-
Stickleback	9	28-41	3.5	-	-
Banded Killifish	1	27	0.5	-	-
Dace	20	17-61	10	WF	FWIA
White Sucker	26	32-47	19	WF	FWIA
Golden Shiner	3	65	7	WF	CWPD
OUTFALL					
White Sucker *	1	286	250	-	-
White Sucker *	1	314	300	-	-
White Sucker *	1	120	17	WF	FWIA
Golden Shiner *	1	186	83	WF	CWPD
Golden Shiner	1	96	12	WF	CWPD
Golden Shiner	1	87	9	-	-
Golden Shiner	2	61	6	-	-
Creek Chub	2	68	7	-	-
Dace	25	30-61	25	WF	FWIA
Stickleback	5	34	2	-	-

EP = Edible Portion
WF = Whole Fish
HHRA = Human Health Risk Assessment
FWIA = Fish and Wildlife Impact Analysis
CWPD = Comparison with Previous Data
* = Fish included in average edible fish mass calculation for risk assessment.

Table 2-8. *Fish Sampling Information - 1992 Ley Creek PCB Dredging Site RI.*

FISH COLLECTED FROM LEY CREEK ON JULY 16, 1992					
Species	**#**	**Length (mm)**	**Mass (g)**	**Portion Analyzed**	**Purpose**
DOWNSTREAM					
Carp *	1	550	2,727	WF	CWPD
Carp *	1	545	2,727	Fillet	HHRA
Carp *	1	660	4,091	Fillet	HHRA
Carp *	1	508	2,386	WF	CWPD
White Sucker *	1	227	120	-	-
White Sucker *	1	276	240	-	-
White Sucker *	1	256	180	-	-
White Sucker *	1	174	54	-	-
White Sucker *	1	151	35	-	-
White Sucker *	1	120	19	WF	FWIA
Pumpkinseed *	1	120	24	EP	HHRA
Banded Killifish	2	37	4	-	-
Dace	14	32-80	22	WF	FWIA

EP = Edible Portion
WF = Whole Fish
HHRA = Human Health Risk Assessment
FWIA = Fish and Wildlife Impact Analysis
CWPD = Comparison with Previous Data
* = Fish included in average edible fish mass calculation for risk assessment.

Source: O'Brien & Gere Engineers, Inc. Remedial Investigation; Ley Creek Dredged Material Area. September 1993

Table 3-1. *Ground water elevations*.

Investigation	Property Area	Well location	Top of Casing (TOC) Elevation (ft)	Depth to Water (ft from TOC)	Ground Water Elevation (ft)	Notes
EDISS86	Thinner	T-1	391.02	8.1	382.91	D
EDISS86	Thinner	T-2	389.15	6.8	382.33	D
EDISS86	Thinner	T-3	387.31	5.6	381.71	D
EDISS86	Thinner	T-4	388.21	6.2	382.00	D
EDISS86	Thinner	T-5	391.01	8.5	382.56	D
EDISS86	Thinner	T-6	395.71	12.5	383.24	D
EDISS86	Thinner	T-7	393.81	11.3	382.52	D
EDISS86	Thinner	T-8	387.65	6.7	380.94	D
EDISS86	Thinner	T-9	387.11	5.6	381.50	D
EDISS86	Thinner	T-10	387.38	3.1	384.28	
EDISS86	Thinner	T-13	387.37	3.8	383.56	
EDISS86	Thinner	T-15	388.07	6.4	381.67	
EDISS86	Thinner	T-18	387.46	7.8	379.65	
EDISS86	Thinner	T-21	387.68	9.4	378.32	
EDISS86	Thinner	T-24	388.15	6.1	382.07	
EDISS86	Thinner	T-26	386.70	8.4	378.28	
EDISS86	Thinner	T-29	387.73	5.3	382.42	
EDISS86	Thinner	T-33B	386.75	10.0	376.76	
EDIHI85	Thinner	P-5	386.80	9.6	377.22	A, B
EDIHI85	Thinner	P-9	387.41	6.8	380.64	C,B
OBGSIMWP	Northern	MW-1S	384.00	7.1	376.86	
OBGSIMR	Northern	MW-1D	383.77	8.2	375.60	
OBGSIMR	Northern	MW-2S	386.95	7.8	379.14	
OBGSIMR	Northern	MW-2D	386.19	10.0	376.15	
OBGSIMWP	Northern	MW-3S	383.70	8.5	375.18	
OBGSIMR	Northern	MW-3D	383.61	8.7	374.89	
OBGSIMWP	Northern	MW-4S	385.80	10.5	375.27	
OBGSIMR	Northern	MW-4D	385.60	10.8	374.82	
OBGSIMR	Northern	MW-5S	383.81	8.6	375.18	
OBGSIMR	Northern	MW-5D	383.02	8.3	374.75	
EDIHI85	Northern	W-1S	391.03	12.9	378.13	A,B
EDIHI86	Northern	W-1D	390.59	13.0	377.60	A,B
EDIHI87	Northern	W-6S	383.21	7.9	375.33	A,B
EDIHI88	Northern	W-6D	383.54	8.4	375.19	A,B
OBGSRI99	Northern	OBG-6S	381.35	5.6	375.78	
OBGSRI99	Northern	OBG-6D	381.20	5.6	375.57	
OBGSRI99	Northern	OBG-7S	383.74	8.5	375.22	
OBGSRI99	Northern	OBG-7D	383.58	9.9	373.72	
OBGSRI99	Northern	OBG-8S	381.35	7.0	374.36	
OBGSRI99	Northern	OBG-8D	381.33	7.5	373.79	
OBGSRI99	Northern	OBG-9S	382.12	7.5	374.59	
OBGSRI99	Northern	OBG-9D	382.34	7.5	374.81	
OBGSRI99	Northeast	OBG-10S	382.00	5.1	376.88	
OBGSRI99	Northeast	OBG-10D	381.80	5.5	376.26	
EDI_II86	Northeast	W-11S	383.36	7.5	375.84	B
EDI_II86	Northeast	W-11D	383.41	6.8	376.64	B
OBGSRI99	Southwest	OBG-11	404.52	12.6	391.90	
OBGSRI99	Southwest	OBG-15	391.40	8.4	383.03	
OBGSRI99	IWT Plant	OBG-12	395.89	9.9	386.01	

Table 3-1. *Ground water elevations.*

Investigation	Property Area	Well location	Top of Casing (TOC) Elevation (ft)	Depth to Water (ft from TOC)	Ground Water Elevation (ft)	Notes
OBGSRI99	IWT Plant	OBG-13	395.20	9.4	385.85	
OBGSRI99	Mnftr Bldg	MWI-1	391.72	7.1	384.59	
OBGSRI99	Mnftr Bldg	MWI-2	391.55	7.0	384.53	
OBGSRI99	Mnftr Bldg	MWI-3	391.74	11.8	379.90	
OBGSRI99	Mnftr Bldg	WT-3R	387.80	4.2	383.56	
OBGSRI99	Mnftr Bldg	OBG-PZ-3	391.48	11.7	379.74	
OBGSRI99	Mnftr Bldg	OBG-PZ-4	391.77	8.6	383.18	
OBGSRI99	Mnftr Bldg	OBG-PZ-5	391.66	7.1	384.60	
OBGSRI99	Mnftr Bldg	OBG-PZ-6	391.80	NA	NA	
OBGSRI99	Mnftr Bldg	OBG-PZ-7	391.68	12.1	379.56	
OBGSRI99	Mnftr Bldg	OBG-PZ-8	391.71	8.4	383.28	
EDIHI85	Southeast	P-2	386.05	3.7	382.39	A,B
EDIHI85	Southeast	U-1S	396.62	5.3	391.32	A,B
EDIHI85	Southeast	U-1D	396.64	7.0	389.60	A,B
OBGLCHI	Ley Creek	OBG-2	378.34	6.2	372.10	
OBGLCHI	Ley Creek	OBG-3	379.38	10.3	369.09	
OBGLC93	Ley Creek	OBG-3D	379.11	2.9	376.23	
OBGLCHI	Ley Creek	OBG-5	379.07	9.9	369.15	
OBGLCHI	Ley Creek	OBG-7A	378.69	9.1	369.63	
OBGLCHI	Ley Creek	OBG-7B	379.40	10.2	369.22	
OBGLCHI	Ley Creek	OBG-7C	380.70	11.6	369.07	

Notes:

NA = Data not available

A= Casing elevation based on curb box rim

B= Well screen data obtained from associated investigation reports.
Well casing and ground elevations were resurveyed in November 1999.

C= Casing elevation based on top of concrete

D= Based on information in report (monitoring well installation records not located).

Key:

EDIHI85 EDI Engineering & Science, Inc.
Hydrogeological Investigation, September 1985

EDI_II86 EDI Engineering & Science, Inc.
Phase II Hydrogeological Investigation, February 1986

EDISS86 EDI Engineering & Science, Inc.
Solvent Spill Hydrogeological Investigation and Remedial Action Plan, April 1986

OBGSIMR O'Brien & Gere Engineers, Inc.
Report - Surface Impoundment Post Closure Monitoring Program, March 1989

OBGLCHI O'Brien & Gere Engineers, Inc.
Report - Hydrogeological Investigation of Fill Area Along Ley Creek, April 1987

OBGSIMWP O'Brien & Gere Engineers, Inc.
Work Plan - Surface Impoundment Post Closure Ground Water Monitoring Plan
April 1988, updated March 1992

OBGLC93 O'Brien & Gere Engineers, Inc.
Report - Ley Creek Remedial Investigation, September 1993

OBGSRI99 O'Brien & Gere Engineers, Inc.
1999 Supplemental Remedial Investigation Sampling Activities

Source: O'Brien & Gere Engineers, Inc.

Table 3-2. *Permeability/Hydraulic Conductivity Data Summary.*

Investigation	Well ID	Installation Date	Screened Depth Interval (ft bgs)	Geologic Unit		Permeability/hydraulic conductivity (ft/day)	Test Method
Vertical Permeability Measurements							
EDIHI85	W-1D	05/22/85	13.0-15.0 (1)	silt & clay	Glaciulacustrine	2.83E-04	laboratory-triaxial
EDIHI85	W-2D	05/20/85	15.0-17.0 (1)	F/M sand	Glaciulacustrine	1.02E+00	laboratory-triaxial
EDIHI85	W-7D	05/24/85	16.0-18.0 (1)	silt	Glaciulacustrine	3.97E-04	laboratory-triaxial
EDIHI85	W-9D	05/21/85	9.0-11.0 (1)	silt & clay	Glaciulacustrine	2.41E-04	laboratory-triaxial
EDIHI85	W-2D	05/20/85	21.5-23.0 (1)	till	Lodgement till	1.42E-04	laboratory-triaxial
EDIHI85	W-6D	05/23/85	32.0-34.0 (1)	till	Lodgement till	1.70E-04	laboratory-triaxial
EDIHI85	W-9D	05/21/85	32.0-34.0 (1)	till	Lodgement till	7.09E-05	laboratory-triaxial
Horizontal Hydraulic Conductivity Measurements							
TAHI83	B-1	07/11/83	9.0-19.0	silt, clay, fine sand	Glaciulacustrine	1.30E+00	field-falling head
TAHI83	B-1	07/11/83	9.0-19.0	silt, clay, fine sand	Glaciulacustrine	3.97E+00	field-rising head
TAHI83	B-2	07/11/83	8.0-18.0	silt, clay, fine sand	Glaciulacustrine	3.97E+00	field-falling head
TAHI83	B-2	07/11/83	8.0-18.0	silt, clay, fine sand	Glaciulacustrine	3.12E+00	field-rising head
TAHI83	B-4	07/11/83	10.0-20.0	silt, clay, sand	Glaciulacustrine	3.12E+00	field-falling head
TAHI83	B-4	07/11/83	10.0-20.0	silt, clay, sand	Glaciulacustrine	3.12E+00	field-rising head
EDIHI85	U-1D	06/04/85	11.0-21.0	sand & silt	Glaciulacustrine	2.72E-01	field - falling head
EDIHI85	U-1D	06/04/85	11.0-21.0	sand & silt	Glaciulacustrine	2.41E-01	field - rising head
EDIHI85	W-1D	05/22/85	20.5-30.5	sand & silt	Glaciulacustrine	7.94E-01	field - falling head
EDIHI85	W-1D	05/22/85	20.5-30.5	sand & silt	Glaciulacustrine	4.82E-01	field - rising head
EDIHI85	W-2D	05/20/85	9.5-19.5	sand & silt	Glaciulacustrine	2.83E-01	field - falling head
EDIHI85	W-2D	05/20/85	9.5-19.5	sand & silt	Glaciulacustrine	2.83E-01	field - rising head
EDIHI85	W-3D	04/20/85	13.5-23.5	silt & clay	Glaciulacustrine	5.67E-02	field - falling head
EDIHI85	W-4D	05/16/85	13.0-23.0	silt & fine sand	Glaciulacustrine	4.54E-01	field - falling head
EDIHI85	W-5D	05/16/85	18.0-28.0	fine sand	Glaciulacustrine	7.94E-01	field - falling head
EDIHI85	W-5D	05/16/85	18.0-28.0	fine sand	Glaciulacustrine	1.02E+00	field - rising head
EDIHI85	W-7D	05/24/85	22.0-32.0	fine sand & till	Glaciulacustrine	4.25E-02	field - falling head
EDIHI85	W-8D	05/21/85	20.0-30.0	silt	Glaciulacustrine	8.22E-02	field - falling head
EDIHI85	W-9D	05/21/85	18.5-28.5	silt	Glaciulacustrine	1.30E+00	field - falling head
OBGLCHI	OBG-1	11/24/86	5.0-10.0	silt & fine sand	Glaciulacustrine	7.51E-03	field - rising head
OBGLCHI	OBG-2	11/21/86	3.5-8.5	silt & clay	Glaciulacustrine	4.71E-02	field - rising head
OBGLCHI	OBG-3	11/20/86	4.0-9.0	silt	Glaciulacustrine	1.06E-02	field - rising head
OBGLCHI	OBG-4	11/20/86	4.0-9.0	silt & fine sand	Glaciulacustrine	1.90E-01	field - rising head
OBGLCHI	OBG-5	11/20/86	3.7-8.7	silt	Glaciulacustrine	6.09E-02	field - rising head

RACER0060513

Table 3-2. *Permeability/Hydraulic Conductivity Data Summary.*

Investigation	Well ID	Installation Date	Screened Depth Interval (ft bgs)	Geologic Unit		Permeability/hydraulic conductivity (ft/day)	Test Method
OBGLCHI	OBG-6	11/10/86	12.0-17.0	silt	Glaciulacustrine	1.26E-01	field - rising head
OBGLCHI	OBG-7A	11/21/86	5.0-8.0	silt & clay	Glaciulacustrine	8.05E-01	field - rising head
OBGLCHI	OBG-7B	11/21/86	6.0-9.0	silt & clay	Glaciulacustrine	5.30E-01	field - rising head
OBGLCHI	OBG-7C	11/21/86	6.5-9.5	silt & clay	Glaciulacustrine	6.09E-02	field - rising head
OBGLCFI	MW-8	09/13/88	5.2-15.2	F/M sand	Glaciulacustrine	2.18E-01	field - rising head
OBGLCFI	MW-9	09/13/88	5.1-15.1	F/M sand	Glaciulacustrine	7.06E-01	field - rising head
OBGLCFI	MW-10	09/13/88	5.1-15.1	fine sand & silt	Glaciulacustrine	1.11E+00	field - rising head
OBGLCFI	MW-11	09/14/88	5.1-15.1	fine sand & silt	Glaciulacustrine	7.45E+00	field - rising head
OBGLCFI	MW-12	09/14/88	7.1-17.1	fine sand & silt	Glaciulacustrine	3.85E-01	field - rising head
OBGLCFI	MW-13	09/14/88	6.0-11.0	fine sand & silt	Glaciulacustrine	2.05E-01	field - rising head
OBGSIMR	MW - 1S	09/19/88	7.0-12.0	silt, clay, fine sand	Glaciulacustrine	5.39E-01	field - rising head
OBGSIMR	MW - 2S	09/20/88	8.0-13.0	silt, clay, fine sand	Glaciulacustrine	4.54E-01	field - rising head
OBGSIMR	MW - 3S	09/21/88	4.0-14.0	fine sand & silt	Glaciulacustrine	3.12E-01	field - rising head
OBGSIMR	MW - 4S	09/22/88	4.0-14.0	silt, fine sand, clay	Glaciulacustrine	2.83E-01	field - rising head
OBGSIMR	MW - 5S	09/22/88	4.0-14.0	fine sand, silt, clay	Glaciulacustrine	6.24E-01	field - rising head
OBGSIMR	MW - 1D	09/17/88	22.0-27.0	silt & fine sand	Glaciulacustrine	3.12E-01	field - rising head
OBGSIMR	MW - 2D	09/20/88	24.0-29.0	silt & fine sand	Glaciulacustrine	4.82E-01	field - rising head
OBGSIMR	MW - 3D	09/21/88	25.5-30.5	silt & fine sand	Glaciulacustrine	2.15E-01	field - rising head
OBGSIMR	MW - 4D	09/22/88	30.0-35.0	fine sand & silt	Glaciulacustrine	3.97E-01	field - rising head
OBGSIMR	MW - 5D	09/22/88	30.5-35.0	silt & fine sand	Glaciulacustrine	3.12E+00	field - rising head
OBGSRI99	OBG-7S	09/30/99	8.78 - 18.78	fine sand, clay, silt	Glaciulacustrine	9.20E-01	field - rising head
OBGSRI99	OBG-7D	09/30/99	31.5 - 36.5	fine sand, clay, silt	Glaciulacustrine	1.64E-01	field - rising head
OBGSRI99	OBG-9S	10/04/99	7.83 - 17.83	fine sand, clay, silt	Glaciulacustrine	1.76E+00	field - rising head
OBGSRI99	OBG-11	10/06/99	8.28 - 18.28	fine sand, clay, silt	Glaciulacustrine	9.41E-01	field - rising head
OBGSRI99	MWI-2	07/15/99	4.75 - 14.75	fine sand, clay, silt	Glaciulacustrine	4.91E-02	field - rising head
OBGSRI99	MWI-3	07/15/99	4.75 - 14.75	fine sand, clay, silt	Glaciulacustrine	5.59E-01	field - rising head

Notes:

(1) Interval represents Shelby tube sample interval, not screened interval.
bgs = below ground surface
F/M = fine / medium
F/C = fine / coarse

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Table 3-2. *Permeability/Hydraulic Conductivity Data Summary.*

Investigation	Well ID	Installation Date	Screened Depth Interval (ft bgs)	Geologic Unit	Permeability/hydraulic conductivity (ft/day)	Test Method

Key:

TAHI83 Thomsen Associates and Empire Soils Investigations, Inc.
Hydrogeologic Investigation, December 1983

EDHI85 EDI Engineering & Science, Inc.
Hydrogeological Investigation, September 1985

OBGLCHI O'Brien & Gere Engineers, Inc.
Report - Hydrogeological Investigation of Fill Area Along Ley Creek, April 1987

OBGLCFI O'Brien & Gere Engineers, Inc.
Field Investigations - Ley Creek Dredged Material Area, July 1989

OBGSIMR O'Brien & Gere Engineers, Inc.
Report - Surface Impoundment Post Closure Monitoring Program, March 1989

OBGSRI99 O'Brien & Gere Engineers, Inc.
1999 Supplemental Remedial Investigation sampling activities

Table 3-3. *Subsurface Soil Field Screening Summary.*

Soil boring location	*Total depth of borehole (ft)*	*VOC Screening Max. PID reading (depth of detection)*	*DNAPL Screening UV light reading (depth of detection)*
OBG-PZ-1	21.0	68 ppm (11-13 ft)	negative
OBG-PZ-2	18.0	260 ppm (14-16 ft)	positive (12-18 ft)
OBG-PZ-3	20.0	0.4 ppm (0.5-4 ft)	negative
OBG-PZ-4	11	220 ppm (1-3 ft)	positive (5.5-7.5 ft)
OBG-PZ-5	13	5.2 ppm (11-13 ft)	positive (11-13 ft)
OBG-PZ-6	11	0.6 ppm (9-11 ft)	positive (6.5-9 ft)
OBG-PZ-7	20	0.6 ppm (7-9 ft)	negative
OBG-PZ-8	14	84 ppm (2-4 ft)	positive (2-10 ft)
OBG-TB-1	11.0	40 ppm (9-11 ft)	negative
OBG-TB-5	12.0	2.4 ppm (2-4 ft)	negative
OBG-TB-12	13.0	360.0 ppm (11–13 ft)	negative
OBG-TB-13	13.0	11.0 ppm (9–11 ft)	negative
OBG-TB-14	12.0	0.4 ppm (8–10 ft)	negative
OBG-TB-15	13.0	0.2 (12-14 ft)	negative
OBG-TB-16	9.0	0.0 ppm	negative
OBG-TB-17	12.0	0.0 ppm	negative
OBG-TB-19	11.0	1.2 ppm (9–11ft)	negative
OBG-TB-20	6.0	0.0 ppm	negative
OBG-TB-21	8.0	0.0 ppm	negative
OBG-TB-22	8.0	0.0 ppm	negative
OBG-TB-23	8.0	0.0 ppm	negative
OBG-TB-24	8.0	0.0 ppm	negative
OBG-TB-25	12.0	0.0 ppm	negative
OBG-TB-26	8.0	0.0 ppm	negative
OBG-TB-27	14.0	0.0 ppm	negative
OBG-TB-28	14.0	0.0 ppm	negative
OBG-TB-29	10.0	0.0 ppm	negative
OBG-TB-30	8.0	0.0 ppm	negative

Table 3-3. *Subsurface Soil Field Screening Summary.*

Soil boring location	*Total depth of borehole (ft)*	*VOC Screening Max. PID reading (depth of detection)*	*DNAPL Screening UV light reading (depth of detection)*
OBG-TB-31	8.0	0.0 ppm	negative
OBG-TB-32	6.0	0.0 ppm	negative
OBG-TB-33	6.0	0.0 ppm	negative
OBG-TB-34	10.0	0.5 ppm (8-10 ft)	negative
OBG-TB-35	8.0	0.1 ppm (0-1 ft)	negative
OBG-TB-36	25.0	55.0 ppm (12-14 ft)	negative
OBG-TB-37	25.2	11.4 ppm (12-14 ft)	negative
OBG-TB-38	18.0	2.6 ppm (4-6 ft)	negative
OBG-TB-39	13.5	6.3 ppm (10-12 ft)	negative
OBG-TB-40	12.0	3.7 ppm (8-10 ft)	negative
OBG-TB-41	36.0	18.0 ppm (32-34 ft)	negative
OBG-TB-42	34.0	3.6 ppm (10-12 ft)	negative
OBG-TB-43	6.0	0.0 ppm	negative
OBG-TB-44	8.0	1.0 pp, (6-8 ft)	negative
OBG-TB-45	8.0	0.0 ppm	negative
OBG-TB-46	8.0	0.0 ppm	negative
OBG-TB-47	8.0	0.0 ppm	negative

Note: UV – Ultraviolet, DNAPL – Dense non-aqueous phase liquid, PID – Photoionization detector, VOC – Volatile organic compound

Source: O'Brien & Gere Engineers, Inc.

Table 3-4. *Summary of Source Area Characterization.*

Area	Surface and subsurface soil samples	Constients detected over NYSDEC TAGM 4046
Manufacturing building		
Abandoned underground hydraulic oil sumps and former tanks		
Sump A	BH-21	--
Sump B	BH-26	--
Sump C	BH-22	--
Sump D	BH-23	--
Sump E	BH-19	PCBs
Sump F	BH-18	--
Sump G	BH-16	--
Sump H	BH-13, BH-27, BH-28	PCBs
Sump I	BH-15, BH-39, BH-40	PCBs
Sump J	BH-11, BH-41	PCBs
Sump K	BH-42	--
Sump L	BH-43, BH-44, BH-45	--
Sump M	BH-25, BH-29, BH-30	--
Former Tank N	BH-24	--
Former Tank O	BH-20, BH-49, BH-50	PCBs
Former Tank P	BH-14 (offset)	--
Former Tank Q	BH-12	--
Former Tank R	BH-17	--
Abandoned underground oil/water collection sumps		
Sump 2	OBG-TB-15	nickel, zinc
Sump 3	OBG-TB-14	TCE, nickel, zinc
Sump 6	OBG-TB-5	nickel, zinc
Sump 7	OBG-TB-19	PCBs, copper, nickel, zinc
Sump 8	OBG-TB-1	benzo(a)pyrene, phenol, copper, nickel, zinc
Former electroplating sumps	OBG-TB-12, OBG-13, OBG-16, OBG-17	TCE, cis-1,2-DCE, methylene chloride, chromium, copper, nickel, zinc

Table 3-4. *Summary of Source Area Characterization.*

Area	Surface and subsurface soil samples	Constients detected over NYSDEC TAGM 4046
Sump 1	BH-4	copper, nickel
Sump 3	BH-9	copper, nickel
Sump 4	BH-5	--
Sump 5	BH-6	--
Sump 6	BH-10 (offset)	--
Sump 7	BH-7	TCE, chromium, copper, nickel
Former PCB Oil USTs	HA-5, HA-6	--
Paint room	BH-7, BH-9, BH-46, BH-47, BH-48, OBG-TB-12, OBG-TB-13, OBG-TB-16, OBG-TB-17	TCE, cis-1,2-DCE, methylene chloride, chromium, copper, nickel, zinc
Abandoned stormwater sewer trench	OBG-TB-2,	--
Sump line 1	OBG-TB-2, OBG-TB-3	--
Sump line 5	BH-31, BH-32, BH-33, BH-34, BH-35, BH-36, BH-37, BH-38, BH-51, BH-52, BH-53, BH-54, OBG-TB-6, OBG-TB-7, OBG-TB-8, OBG-PZ-4, OBG-PZ-5, OBG-PZ-6	PCBs, residual NAPL
Loading dock leveler sumps in the east and west receiving docks	HA-3, HA-4	--
Compactor area	HA-1	toluene, xylene
Southeast property area		
General miscellaneous storage area	HA-7, HA-8, SS-99-18, SS-99-19, SS-99-20, SS-99-21	PCBs, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, arsenic, copper, nickel, zinc, beryllium, iron
Parking lot area	OBG-TB-22, OBG-TB-23	Benzo(a)pyrene, benzo(b)fluroranthene, nickel, zinc
Industrial waste treatment plant area		
General IWT plant area	P-13, WT-10, WT-11, WT-12, WT-13, WT-14, WT-15, S-11, S-12, SS-99-22, SS-99-23, SS-99-28, SS-99-30	PCBs, chromium, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)perylene, phenol, nickel, zinc

Table 3-4. *Summary of Source Area Characterization.*

Area	Surface and subsurface soil samples	Constients detected over NYSDEC TAGM 4046
Electroplating wastewater treatment tanks	HA-9, HA-10	--
Former liquid waste incineration area	HA-12, SS-99-24, SS-99-25, SS-99-26, SS-99-27, SS-99-31	PCBs, dioxin (2,3,7,8-TCDD equivalents), benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, chrysene, phenol, arsenic, chromium, copper, lead, nickel, zinc, beryllium, iron
Former TCE storage area	OBG-TB-30, OBG-TB-38	nickel, zinc
Former fuel oil tanks area	OBG-TB-31, OBG-TB-32, OBG-TB-43, OBG-TB-44)	PCBs, copper, nickel, zinc
SO_2 scrubber area	HA-11	copper, nickel
Former thinner tanks		
Thinner spill area	T-wells, HP-BH-5, HP-4	toluene, ethylbenzene, xylene
former transformer/switch house	OBG-TB-45, OBG-TB-46, OBG-TB-47	benzo(a)pyrene, benzo(b)fluoranthene, anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, dibenzofuran, fluoranthene, flurorene, indeno(1, 2, 3-c,d)pyrene, phenanthrene, pyrene, beryllium, iron, nickel, zinc
Northeast property area	P-3, P-4, P-11, P-12, HA-2, OBG-TB-24, OBG-TB-36, OBG-TB-37, OBG-TB-34, OBG-TB-35, SS-99-14, SS-99-15, SS-99-16, SS-99-17	TCE, PCBs, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, chromium, copper, nickel, zinc, beryllium, iron
Northern property area		
General northern property area	P-5, P-6, P-7, NMPC utility pole location samples, OBG-TB-25, OBG-TB-26, OBG-TB-27, OBG-TB-28	PCBs, arsenic, chromium, copper, nickel, zinc

Table 3-4. *Summary of Source Area Characterization.*

Area	Surface and subsurface soil samples	Constients detected over NYSDEC TAGM 4046
Former drainiage swale	003-1, 003-2, 003-3, 003-4, 003-5, 003-6, 003-7, 003-8, 003-9, 003-10, 003-11, B-1, B-2, B-3, B-4, B-5, B-6, B-7, B-8, B-9, B-10, B-11, B-12, B-13, B-14, B-15, B-16, B-17, B-18, Onondaga County Ley Creek Interceptor Sewer sampling, T5-1, T5-2, T6-1, T7-1, T8-1, T8-2, T8-3, T9-1, T10-1, T11-1, T12-1, T12-2	Chlorobenzene, PCBs, arsenic, chromium, copper, nickel, zinc, TCE
Former storage cell location	S#1, S#2, S#3, S#4, S#5, S#6, S#7, S#8, S#9, S#10	PCBs
On-site landfill	BH-1, BH-2, BH-3, SS-99-06, SS-99-07, SS-99-08, SS-99-09, SS-99-10, SS-99-11, SS-99-12, T1-1, T1-2, T1-3, T1-4, T2-1, T2-2, T2-3, T2-4, T3-1, T3-2, T3-3, T3-4, T3-5, T3-6, T4-1, T4-2, T4-3	TCE, cis-1,2-DCE, xylene, toluene, ethylbenzene, benzo(a)pyrene, benzo(b)fluoranthene, di-n-octyl-phthalate, 2-methylphenol, 4-methylphenol, 4-chloro-3-methylphenol, phenol, PCBs, arsenic, chromium, copper, nickel, zinc, barium, beryllium, mercury, iron, selenium
Closed impounments	OBG-TB-29, OBG-TB-41, OBG-TB-42	PCBs, nickel, zinc
Southwest property area		
Mold storage building	OBG-TB-39, OBG-TB-40	TCE, nickel, zinc
Storage pad area	OBG-TB-20, OBG-TB-21	chromium, copper, nickel, zinc
Hazardous waste storage area	SS-99-01, SS-99-02, SS-99-03, SS-99-04	benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, phenol, chromium, copper, mickel, zinc, beryllium
Site Background	OBG-TB-33	zinc

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-22 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-23 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-24 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-25 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-26 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-27 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-28 IWT Area 10/27/1999 0 - 1 ft. mg/Kg
Aroclor 1248		1	[7]	[8]	0.2	[13]	[3900]	[2 J]	0.8
Aroclor 1254		1	---	---	---	---	---	---	---
Total PCBs		1	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-29 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-30 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-31 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	OBG-1 LC PCB Dredgings Site 11/24/1986 0 - 2 ft. mg/Kg	OBG-2 LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg	OBG-3 LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg	OBG-4 LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg
Aroclor 1248		1	---	[11]	[14 J]	---	---	---	---
Aroclor 1254		1	0.8	---	---	---	---	---	---
Total PCBs		1	---	---	---	[5.7]	[9.9]	[81]	[1.9]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-5 LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 0 - 2 ft. mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg	131+12-132 N. Property Area 10/30/1991 mg/Kg	20+42-121+2 N. Property Area 11/12/1991 mg/Kg	20+64-120+4 N. Property Area 10/30/1991 mg/Kg	21+20-122+1 N. Property Area 10/30/1991 mg/Kg
Aroclor 1248		1	---	---	---	---	---	---	---
Aroclor 1254		1	---	---	---	---	---	---	---
Total PCBs		1	[100]	[12.2]	[2.6]	[2]	[2]	[2]	[3]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	21+20-122+1 N. Property Area 11/12/1991 mg/Kg	22+16-123+2 N. Property Area 11/06/1991 mg/Kg	23+25-124+3 N. Property Area 11/06/1991 mg/Kg	24+33-125+4 N. Property Area 11/06/1991 mg/Kg	25+42-126+5 N. Property Area 11/06/1991 mg/Kg	26+51-127+6 N. Property Area 11/16/1991 mg/Kg	27+60-128+4 N. Property Area 10/30/1991 mg/Kg
Aroclor 1248		1	---	---	---	---	---	---	---
Aroclor 1254		1	---	---	---	---	---	---	---
Total PCBs		1	[11]	[25]	[130]	[100]	[14]	[8]	1

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	35 S COMP N. Property Area 04/18/1996 0.0 - 7.0 ft. mg/Kg	36C S COMP N. Property Area 04/19/1996 0.0 - 7.0 ft. mg/Kg	36E S COMP N. Property Area 04/19/1996 0.0 - 7.0 ft. mg/Kg	37C S COMP N. Property Area 04/19/1996 0.0 - 5.5 ft. mg/Kg	37E S COMP N. Property Area 04/19/1996 0.0 - 7.0 ft. mg/Kg	37W S COMP N. Property Area 04/19/1996 0.0 - 7.0 ft. mg/Kg	39 S COMP N. Property Area 04/18/1996 0.0 - 7.0 ft. mg/Kg
Aroclor 1248		1	[5]	[15]	[1.4]	[5.1]	[11]	1	1
Aroclor 1254		1	---	---	---	---	---	---	---
Total PCBs		1	[5]	[15]	[1.4]	[5.1]	[11]	1	1

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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FXP File: N:\3247\21535\SRI\TABLEPRS.FXP

File Number: 3247.21535

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	B-17 COMP N. Property Area 10/05/1990 0.0 - 11.0 ft. mg/Kg	LC-7-1 N. Property Area 11/01/1991 mg/Kg	OBG-TB-25 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg	OBG-TB-26 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg	OBG-TB-27 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg	OBG-TB-28 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 0 - 2 ft. mg/Kg
Aroclor 1248		1	---	---	[3 J]	[37 J]	0.3	[2]	0.1 J
Aroclor 1254		1	---	---	---	---	---	---	---
Total PCBs		1	[3848]	0.5	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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File Number: 3247.21535

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 0 - 1 ft. mg/Kg	S#1 COMP N. Property Area 10/15/1993 0.0 - 0.5 ft. mg/Kg	S#10 COMP N. Property Area 10/15/1993 0.0 - 0.5 ft. mg/Kg	S#2 COMP N. Property Area 10/15/1993 0.0 - 0.5 ft. mg/Kg	S#3 COMP N. Property Area 10/15/1993 0.0 - 0.5 ft. mg/Kg	S#4 COMP N. Property Area 10/15/1993 0.0 - 0.5 ft. mg/Kg	S#5 COMP N. Property Area 10/15/1993 0.0 - 0.5 ft. mg/Kg
Aroclor 1248		1	[76]	[1.3]	[1.8]	[3.9]	[4]	[4.9]	[5.4]
Aroclor 1254		1	---	---	---	---	---	---	---
Total PCBs		1	---	[1.3]	[1.8]	[3.9]	[4]	[4.9]	[5.4]

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NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	S#6 COMP N. Property Area 10/15/1993 0.0 - 0.5 ft. mg/Kg	S#7 COMP N. Property Area 10/15/1993 0.0 - 0.5 ft. mg/Kg	S#8 COMP N. Property Area 10/15/1993 0.0 - 0.5 ft. mg/Kg	S#9 COMP N. Property Area 10/15/1993 0.0 - 0.5 ft. mg/Kg	S-11 COMP N. Property Area 05/30/1996 0.0 - 5.0 ft. mg/Kg	S-12 COMP N. Property Area 05/30/1996 0.0 - 5.0 ft. mg/Kg	SS-99-06 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg
Aroclor 1248		1	[6.3]	[2.7]	[3.1]	[3.6]	---	---	[2600 J]
Aroclor 1254		1	---	---	---	---	0.032	0.027	---
Total PCBs		1	[6.3]	[2.7]	[3.1]	[3.6]	0.032	0.027	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-07 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-08 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-09 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-10 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-11 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-12 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-13 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg
Aroclor 1248		1	---	[200 J]	[30]	[5]	[3]	[3]	[3]
Aroclor 1254		1	0.2	---	---	---	---	---	---
Total PCBs		1	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 0 - 1 ft. mg/Kg	SS-99-14 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-15 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-16 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-17 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-18 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-20 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg
Aroclor 1248		1	---	---	---	---	---	---	0.7 J
Aroclor 1254		1	0.7 J	0.2 J	0.4	0.3	[7]	[8 J]	---
Total PCBs		1	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-21 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 0 - 1 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 0 - 1 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 0 - 1 ft. mg/Kg	SS-99-01 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-02 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-03 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg
Aroclor 1248		1	---	[44]	0.1	0.002 J	[10]	---	[2]
Aroclor 1254		1	0.3	---	---	---	---	0.4	---
Total PCBs		1	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-5A
Former IFG Facility
Syracuse, NY
Surface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-04 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	OBG-TB-45 Thinner Tank Area 11/11/1999 0 - 1 ft. mg/Kg	OBG-TB-46 Thinner Tank Area 11/11/1999 0 - 1 ft. mg/Kg	OBG-TB-47 Thinner Tank Area 11/11/1999 0 - 1 ft. mg/Kg
Aroclor 1248		1	[20 J]	---	0.3 J	0.1 J
Aroclor 1254		1	---	0.03	---	---
Total PCBs		1	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	HA-6 Bldg. 08/10/1995 6.0 - 8.0 ft. mg/Kg	BH-32 Bldg. ASWS Trench 04/02/1996 9.0 - 10.8 ft. mg/Kg	BH-33 Bldg. ASWS Trench 04/02/1996 8.0 - 9.7 ft. mg/Kg	BH-34 Bldg. ASWS Trench 04/03/1996 10.0 - 10.8 ft. mg/Kg	BH-35 Bldg. ASWS Trench 04/03/1996 9.0 - 10.3 ft. mg/Kg	BH-36 Bldg. ASWS Trench 04/03/1996 10.5 - 12.2 ft. mg/Kg	BH-37 Bldg. ASWS Trench 04/03/1996 10.0 - 12.1 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	0.48	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	0.41	1.2	7.6	[32]	[2700]	---	[4300]
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	0.41	1.2	7.6	[32]	[2700]	0.48	[4300]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	BH-38 Bldg. ASWS Trench 04/04/1996 12.1 - 12.8 ft. mg/Kg	BH-52 Bldg. ASWS Trench 04/12/1996 7.5 - 8.7 ft. mg/Kg	BH-53 Bldg. ASWS Trench 04/12/1996 12.5 - 12.9 ft. mg/Kg	BH-54 Bldg. ASWS Trench 04/12/1996 12.0 - 12.8 ft. mg/Kg	BH-11 Bldg. Oil Sumps/Tanks 08/02/1995 11.0 - 12.1 ft. mg/Kg	BH-12 Bldg. Oil Sumps/Tanks 08/02/1995 11.0 - 12.0 ft. mg/Kg	BH-13 Bldg. Oil Sumps/Tanks 08/04/1995 7.0 - 8.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	0.33	0.8	0.036	1.1	[38]	1.2	[47]
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	0.027	---	---	---
Total PCBs		10	0.33	0.8	0.036	1.127	[38]	1.2	[47]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	BH-14 Bldg. Oil Sumps/Tanks 08/07/1995 7.0 - 8.0 ft. mg/Kg	BH-15 Bldg. Oil Sumps/Tanks 08/02/1995 7.0 - 9.0 ft. mg/Kg	BH-16 Bldg. Oil Sumps/Tanks 08/03/1995 9.0 - 11.0 ft. mg/Kg	BH-17 Bldg. Oil Sumps/Tanks 08/03/1995 5.0 - 7.0 ft. mg/Kg	BH-18 Bldg. Oil Sumps/Tanks 08/04/1995 7.0 - 7.9 ft. mg/Kg	BH-20 Bldg. Oil Sumps/Tanks 08/08/1995 7.0 - 8.0 ft. mg/Kg	BH-21 Bldg. Oil Sumps/Tanks 08/08/1995 8.0 - 9.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	3.2	[21]	0.37	6.3	0.061	[13]	3.2
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	3.2	[21]	0.37	6.3	0.061	[13]	3.2

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	BH-22 Bldg. Oil Sumps/Tanks 08/04/1995 8.0 - 9.0 ft. mg/Kg	BH-23 Bldg. Oil Sumps/Tanks 08/04/1995 7.0 - 7.7 ft. mg/Kg	BH-25 Bldg. Oil Sumps/Tanks 04/01/1996 3.0 - 5.3 ft. mg/Kg	BH-26 Bldg. Oil Sumps/Tanks 04/01/1996 5.0 - 7.0 ft. mg/Kg	BH-27 Bldg. Oil Sumps/Tanks 04/02/1996 7.5 - 9.0 ft. mg/Kg	BH-28 Bldg. Oil Sumps/Tanks 04/02/1996 7.5 - 9.0 ft. mg/Kg	BH-29 Bldg. Oil Sumps/Tanks 04/02/1996 7.0 - 8.5 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	7.7	0.35	0.26	0.4	9.6	0.27	0.12
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	0.068	---	---	---	---
Total PCBs		10	7.7	0.35	0.328	0.4	9.6	0.27	0.12

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	BH-30 Bldg. Oil Sumps/Tanks 04/02/1996 8.5 - 9.5 ft. mg/Kg	BH-39 Bldg. Oil Sumps/Tanks 04/04/1996 12.8 - 13.8 ft. mg/Kg	BH-40 Bldg. Oil Sumps/Tanks 04/09/1996 13.0 - 13.8 ft. mg/Kg	BH-41 Bldg. Oil Sumps/Tanks 04/09/1996 12.0 - 13.5 ft. mg/Kg	BH-42 Bldg. Oil Sumps/Tanks 04/10/1996 7.0 - 7.7 ft. mg/Kg	BH-43 Bldg. Oil Sumps/Tanks 04/10/1996 11.0 - 12.5 ft. mg/Kg	BH-45 Bldg. Oil Sumps/Tanks 04/10/1996 15.0 - 17.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	0.49	0.66	0.082	[25]	2.7	1.1	0.061
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	0.49	0.66	0.082	[25]	2.7	1.1	0.061

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	BH-49 Bldg. Oil Sumps/Tanks 04/12/1996 10.8 - 11.9 ft. mg/Kg	OBG-TB-17 Bldg. Paint Room 07/19/1999 4 - 8 ft. mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 14 - 16 ft. mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 3 - 5 ft. mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 7 - 9 ft. mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 9 - 11 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 4 - 6 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	0.11	0.002 J	0.003 J	0.2 J	2	0.6	2
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	0.11	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 6 - 8 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 8 - 10 ft. mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 2 - 4 ft. mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 4 - 6 ft. mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 6 - 8 ft. mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 1 - 3 ft. mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 5 - 7 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	3	9	2	1	0.5	0.5	0.9
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 7 - 9 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 3 - 5 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 5 - 7 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 7 - 9 ft. mg/Kg	P-13 IWT Area 07/16/1985 7.0 - 9.0 ft. mg/Kg	WT-13 IWT Area 12/12/1985 2.0 - 4.0 ft. mg/Kg	OBG-TB-31 IWT Fuel Tank Area 10/19/1999 2 - 4 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	1.8	---
Aroclor 1248		10	[140]	0.5	0.5	0.5	0.14	---	0.007 J
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	0.14	1.8	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-31 IWT Fuel Tank Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-32 IWT Fuel Tank Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-43 IWT Fuel Tank Area 10/25/1999 2 - 4 ft. mg/Kg	OBG-TB-44 IWT Fuel Tank Area 10/25/1999 2 - 4 ft. mg/Kg	OBG-TB-44 IWT Fuel Tank Area 10/25/1999 6 - 8 ft. mg/Kg	OBG-TB-30 IWT TCE Storage Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-30 IWT TCE Storage Area 10/19/1999 6 - 8 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	0.01 J	0.004 J	0.004 J	[190]	0.3	0.009 J	0.01 J
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, ---- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-38 IWT TCE Storage Area 10/21/1999 12 - 14 ft. mg/Kg	OBG-2 LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg	OBG-3 LC PCB Dredgings Site 11/20/1986 10 - 12 ft. mg/Kg	OBG-3 LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg	OBG-3 LC PCB Dredgings Site 11/20/1986 4 - 6 ft. mg/Kg	OBG-3 LC PCB Dredgings Site 11/20/1986 8 - 10 ft. mg/Kg	OBG-4 LC PCB Dredgings Site 11/20/1986 4 - 6 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	0.003 J	---	---	---	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	2.4	1.5	[58]	[30]	7.1	[241]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-4 LC PCB Dredgings Site 11/20/1986 8 - 10 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 2 - 4 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 4 - 6 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 6 - 8 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 8 - 10 ft. mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 10 - 12 ft. mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	---	---	---	---	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	1.1	[61]	[467]	[187]	[89]	8.3	[75]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 4 - 6 ft. mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 8 - 10 ft. mg/Kg	OBG-7B LC PCB Dredgings Site 11/20/1986 10 - 12 ft. mg/Kg	OBG-7B LC PCB Dredgings Site 11/20/1986 6 - 8 ft. mg/Kg	OBG-7C LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg	OBG-7C LC PCB Dredgings Site 11/20/1986 4 - 6 ft. mg/Kg	OBG-7C LC PCB Dredgings Site 11/20/1986 6 - 8 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	---	---	---	---	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	[11.2]	0.8	3.1	[216]	[21.4]	[15.8]	[37]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	003-1 N. Property Area 12/05/1985 2.0 - 4.0 ft. mg/Kg	003-1 N. Property Area 12/05/1985 6.0 - 8.0 ft. mg/Kg	003-10 N. Property Area 12/12/1985 6.0 - 8.0 ft. mg/Kg	003-2 N. Property Area 12/05/1985 2.0 - 4.0 ft. mg/Kg	003-2 N. Property Area 12/05/1985 4.0 - 6.0 ft. mg/Kg	003-3 N. Property Area 12/06/1985 2.0 - 4.0 ft. mg/Kg	003-4 N. Property Area 12/06/1985 4.0 - 6.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	0.5	4.2	---	[21]	9.7	[35]
Aroclor 1248		10	[16]	---	---	[79]	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	1.9	---	---	0.6
Total PCBs		10	[16]	0.5	4.2	[80.9]	[21]	9.7	[35.6]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	003-4 N. Property Area 12/06/1985 8.0 - 10.0 ft. mg/Kg	003-5 N. Property Area 12/06/1985 10.0 - 12.0 ft. mg/Kg	003-5 N. Property Area 12/06/1985 4.0 - 6.0 ft. mg/Kg	003-5 N. Property Area 12/06/1985 6.0 - 8.0 ft. mg/Kg	003-5 N. Property Area 12/06/1985 8.0 - 10.0 ft. mg/Kg	003-6 N. Property Area 12/06/1985 6.0 - 8.0 ft. mg/Kg	003-7 N. Property Area 12/06/1985 4.0 - 6.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	0.54	[560]	4	1.8	---	[750]
Aroclor 1248		10	3.2	---	---	---	---	1.9	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	6.2	---	---	---	---
Total PCBs		10	3.2	0.54	[566.2]	4	1.8	1.9	[750]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	003-8 N. Property Area 12/12/1985 2.0 - 4.0 ft. mg/Kg	003-8 N. Property Area 12/12/1985 4.0 - 5.5 ft. mg/Kg	003-8 N. Property Area 12/12/1985 5.5 - 7.5 ft. mg/Kg	003-8 N. Property Area 12/12/1985 7.5 - 9.5 ft. mg/Kg	003-8 N. Property Area 12/12/1985 9.5 - 11.5 ft. mg/Kg	003-9 N. Property Area 12/12/1985 4.0 - 6.0 ft. mg/Kg	003-9 N. Property Area 12/12/1985 6.0 - 8.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	[27]	[55]	1.2	[410]	0.52	[8000]	[2400]
Aroclor 1248		10	---	---	---	---	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	0.53	1.2	---	5.9	---	---	---
Total PCBs		10	[27.53]	[56.2]	1.2	[415.9]	0.52	[8000]	[2400]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	122.0 N. Property Area 11/01/1991 17 ft. mg/Kg	123.4 N. Property Area 11/01/1991 8 ft. mg/Kg	124 N. Property Area 11/01/1991 8 ft. mg/Kg	124.0 N. Property Area 11/01/1991 8 ft. mg/Kg	127.1 N. Property Area 11/01/1991 10 ft. mg/Kg	127.41 N. Property Area 11/01/1991 6 ft. mg/Kg	129.5 N. Property Area 11/01/1991 10 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	---	---	---	---	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	[87]	[190]	[300]	[15]	[18]	[110]	[130]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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RACER0060549

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	129.5 N. Property Area 11/01/1991 5 ft. mg/Kg	35 S N. Property Area 04/18/1996 7 ft. mg/Kg	37E S N. Property Area 04/19/1996 4.0 ft. mg/Kg	37E S N. Property Area 04/19/1996 5 ft. mg/Kg	37E S N. Property Area 04/19/1996 6 ft. mg/Kg	39 S N. Property Area 04/18/1996 5 ft. mg/Kg	39 S N. Property Area 04/18/1996 6 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	[10.5]	7.5
Aroclor 1248		10	---	1.7	[10.6]	[16]	2.4	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	4	1.7	[10.6]	[16]	2.4	[10.5]	7.5

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	B-1 N. Property Area 04/18/1990 4.0 - 6.0 ft. mg/Kg	B-1 N. Property Area 04/18/1990 6.0 - 8.0 ft. mg/Kg	B-10 N. Property Area 04/27/1990 10.0 - 12.0 ft. mg/Kg	B-10 N. Property Area 04/27/1990 2.0 - 4.0 ft. mg/Kg	B-10 N. Property Area 04/27/1990 4.0 - 6.0 ft. mg/Kg	B-10 N. Property Area 04/27/1990 6.0 - 8.0 ft. mg/Kg	B-10 N. Property Area 04/27/1990 8.0 - 10.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	[5200]	[2500]	[36]	[21]	[1200]	[460]	[2400]
Aroclor 1248		10	---	---	---	---	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	[5200]	[2500]	[36]	[21]	[1200]	[460]	[2400]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	B-11 N. Property Area 04/27/1990 2.0 - 4.0 ft. mg/Kg	B-11 N. Property Area 04/27/1990 4.0 - 6.0 ft. mg/Kg	B-11 N. Property Area 04/27/1990 6.0 - 8.0 ft. mg/Kg	B-11 N. Property Area 04/27/1990 8.0 - 10.0 ft. mg/Kg	B-13 N. Property Area 04/27/1990 6.0 - 8.0 ft. mg/Kg	B-14 N. Property Area 04/27/1990 8.0 - 10.0 ft. mg/Kg	B-15 N. Property Area 04/27/1990 2.0 - 4.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	[1500]	[3300]	8.3	[21]	[33]	7.2	[56]
Aroclor 1248		10	---	---	---	---	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	[1500]	[3300]	8.3	[21]	[33]	7.2	[56]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	B-15 N. Property Area 04/27/1990. 8.0 - 10.0 ft. mg/Kg	B-16 N. Property Area 04/27/1990 2.0 - 4.0 ft. mg/Kg	B-2 N. Property Area 04/18/1990 4.0 - 6.0 ft. mg/Kg	B-2 N. Property Area 04/18/1990 6.0 - 8.0 ft. mg/Kg	B-3 N. Property Area 04/18/1990 4.0 - 6.0 ft. mg/Kg	B-3 N. Property Area 04/18/1990 6.0 - 8.0 ft. mg/Kg	B-3 N. Property Area 04/18/1990 8.0 - 10.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	[25]	6	[3500]	[2600]	[9600]	[1100]	7
Aroclor 1248		10	---	---	---	---	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	[25]	6	[3500]	[2600]	[9600]	[1100]	7

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	B-4 N. Property Area 04/18/1990 4.0 - 6.0 ft. mg/Kg	B-4 N. Property Area 04/18/1990 6.0 - 8.0 ft. mg/Kg	B-5 N. Property Area 04/18/1990 2.0 - 4.0 ft. mg/Kg	B-5 N. Property Area 04/18/1990 4.0 - 6.0 ft. mg/Kg	B-5 N. Property Area 04/18/1990 6.0 - 8.0 ft. mg/Kg	B-6 N. Property Area 04/18/1990 2.0 - 4.0 ft. mg/Kg	B-6 N. Property Area 04/18/1990 4.0 - 6.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	[93]	[160]	[13]	[140]	6	7	9
Aroclor 1248		10	---	---	---	---	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	[93]	[160]	[13]	[140]	6	7	9

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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RACER0060554

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	B-6 N. Property Area 04/18/1990 6.0 - 8.0 ft. mg/Kg	B-7 N. Property Area 04/18/1990 4.0 - 6.0 ft. mg/Kg	BH-1 N. Property Area 08/14/1995 9.0 - 10.0 ft. mg/Kg	BH-2 N. Property Area 08/14/1995 8.0 - 10.0 ft. mg/Kg	LC-3-11 N. Property Area 11/01/1991 5 - 5.5 ft. mg/Kg	LC-4-11 N. Property Area 11/01/1991 4 - 5.5 ft. mg/Kg	LC-4-13 N. Property Area 11/01/1991 6 - 6.5 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	[1500]	[12]	---	---	---	---	---
Aroclor 1248		10	---	---	4.6	3.7	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	[1500]	[12]	4.6	3.7	2.7	8	[2500]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	LC-4-20 N. Property Area 11/01/1991 9.5 - 10 ft. mg/Kg	LC-5-13 N. Property Area 11/01/1991 6 - 6.5 ft. mg/Kg	LC-5-17 N. Property Area 11/01/1991 8 - 8.5 ft. mg/Kg	LC-5-3 N. Property Area 11/01/1991 1 - 1.5 ft. mg/Kg	LC-6-13 N. Property Area 11/01/1991 6 - 6.5 ft. mg/Kg	LC-6-13 N. Property Area 11/01/1991 9 - 9.5 ft. mg/Kg	LC-6-3 N. Property Area 11/01/1991 1 - 1.5 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	---	---	---	---	---	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	[2100]	4.6	2.3	[21]	2.5	1.6	3.6

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-25 N. Property Area 10/19/1999 10 - 12 ft. mg/Kg	OBG-TB-25 N. Property Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-26 N. Property Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-26 N. Property Area 10/19/1999 6 - 8 ft. mg/Kg	OBG-TB-27 N. Property Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-28 N. Property Area 10/19/1999 12 - 14 ft. mg/Kg	OBG-TB-28 N. Property Area 10/19/1999 4 - 6 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	0.06	---	---	---	---	[44]	---
Aroclor 1248		10	---	0.2	1	0.005 NJ	---	---	2
Aroclor 1254		10	---	---	---	---	0.3	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-29 N. Property Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-29 N. Property Area 10/19/1999 6 - 8 ft. mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 10 - 12 ft. mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 6 - 8 ft. mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 32 - 34 ft. mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 6 - 8 ft. mg/Kg	P-7 N. Property Area 07/28/1985 4.0 - 6.0 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	0.3	0.3	0.003 J	0.008 J	0.2 J	0.02	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	---	---	[25]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	T01-1 N. Property Trench 11/01/1999 8 ft. mg/Kg	T01-2 N. Property Trench 11/01/1999 8 ft. mg/Kg	T01-3 N. Property Trench 11/02/1999 8.5 ft. mg/Kg	T01-4 N. Property Trench 11/02/1999 9 ft. mg/Kg	T02-1 N. Property Trench 11/03/1999 8 ft. mg/Kg	T02-2 N. Property Trench 11/03/1999 5.5 ft. mg/Kg	T02-3 N. Property Trench 11/03/1999 9 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	[1200 J]	[1500]	[1000]	9	2	[26]	[2700]
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T02-4 N. Property Trench 11/04/1999 5 ft. mg/Kg	T03-1 N. Property Trench 11/03/1999 6 ft. mg/Kg	T03-2 N. Property Trench 11/03/1999 7 ft. mg/Kg	T03-3 N. Property Trench 11/05/1999 5.5 ft. mg/Kg	T03-4 N. Property Trench 11/05/1999 6 ft. mg/Kg	T03-5 N. Property Trench 11/05/1999 4 ft. mg/Kg	T03-6 N. Property Trench 11/09/1999 4 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	[1400]	5
Aroclor 1248		10	0.9	[17]	[79]	---	---	---	---
Aroclor 1254		10	---	---	---	[98]	[99 J]	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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RACER0060560

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	T04-1 N. Property Trench 11/04/1999 2.5 ft. mg/Kg	T04-2 N. Property Trench 11/04/1999 6 ft. mg/Kg	T04-3 N. Property Trench 11/05/1999 3 ft. mg/Kg	T05-1 N. Property Trench 11/11/1999 3.5 ft. mg/Kg	T05-2 N. Property Trench 11/11/1999 3.5 ft. mg/Kg	T06-1 N. Property Trench 11/08/1999 8 ft. mg/Kg	T07-1 N. Property Trench 11/08/1999 8 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	[6800]	[330 J]
Aroclor 1248		10	[1500]	[34]	[150]	0.06	0.02 J	---	---
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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RACER0060561

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	T08-1 N. Property Trench 11/09/1999 9 ft. mg/Kg	T08-2 N. Property Trench 11/09/1999 9 ft. mg/Kg	T08-3 N. Property Trench 11/09/1999 8 ft. mg/Kg	T09-1 N. Property Trench 11/09/1999 10 ft. mg/Kg	T10-1 N. Property Trench 11/09/1999 5.5 ft. mg/Kg	T11-1 N. Property Trench 11/10/1999 8 ft. mg/Kg	T12-1 N. Property Trench 11/10/1999 4 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	[380 J]	[1600]	[84]	[230 J]	---	[190]	---
Aroclor 1248		10	---	---	---	---	3	---	[3800]
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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RACER0060562

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	T12-2 N. Property Trench 11/10/1999 12 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 12 - 14 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 22 - 24 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 6 - 8 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 12 - 14 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 22 - 24 ft. mg/Kg	HA-4 SE Property Area 08/10/1995 9.0 - 9.5 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	---	---	---	---
Aroclor 1248		10	[4300]	3 J	0.02 J	0.009 J	[24 J]	0.005 J	0.39
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	---	---	0.39

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-23 SE Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 5 - 6 ft. mg/Kg	OBG-TB-33 SW Property Area 10/20/1999 5 - 6 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 10 - 12 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 4 - 6 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 4 - 6 ft. mg/Kg
Aroclor 1016		10	---	---	---	---	---	---	---
Aroclor 1242		10	---	---	---	0.04 J	---	---	---
Aroclor 1248		10	0.005 J	0.06	0.002 J	---	0.002 J	0.04	0.3
Aroclor 1254		10	---	---	---	---	---	---	---
Aroclor 1260		10	---	---	---	---	---	---	---
Total PCBs		10	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-5B
Former IFG Facility
Syracuse, NY
Subsurface Soil Data Summary
Detected PCB Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 8 - 10 ft. mg/Kg	HA-1 Thinner Tank Area 08/10/1995 6.0 - 7.0 ft. mg/Kg	OBG-TB-46 Thinner Tank Area 11/11/1999 4 - 6 ft. mg/Kg	OBG-TB-46 Thinner Tank Area 11/11/1999 6 - 8 ft. mg/Kg
Aroclor 1016		10	---	---	---	---
Aroclor 1242		10	---	---	---	---
Aroclor 1248		10	0.005 J	0.14	0.2	0.009 J
Aroclor 1254		10	---	---	---	---
Aroclor 1260		10	---	---	---	---
Total PCBs		10	---	0.14	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup	BH-31 Bldg. ASWS Trench 04/02/1996 8.0 - 9.0 ft. mg/Kg	BH-32 Bldg. ASWS Trench 04/02/1996 9.0 - 10.8 ft. mg/Kg	BH-33 Bldg. ASWS Trench 04/02/1996 8.0 - 9.7 ft. mg/Kg	BH-34 Bldg. ASWS Trench 04/03/1996 10.0 - 10.8 ft. mg/Kg	BH-35 Bldg. ASWS Trench 04/03/1996 9.0 - 10.3 ft. mg/Kg	BH-36 Bldg. ASWS Trench 04/03/1996 10.5 - 12.2 ft. mg/Kg	BH-37 Bldg. ASWS Trench 04/03/1996 10.0 - 12.1 ft. mg/Kg
Oil and Grease		NC	---	---	---	---	---	---	---
SAE 30W		NC	440	10000	2400	23000	55000	360	1700

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Sample ID Area Sample Date Sample Depth Units Compound	TAGM Recommended Soil Cleanup	BH-38 Bldg. ASWS Trench 04/04/1996 12.1 - 12.8 ft. mg/Kg	BH-52 Bldg. ASWS Trench 04/12/1996 7.5 - 8.7 ft. mg/Kg	BH-11 Bldg. Oil Sumps/Tanks 08/02/1995 11.0 - 12.1 ft. mg/Kg	BH-13 Bldg. Oil Sumps/Tanks 08/04/1995 7.0 - 8.0 ft. mg/Kg	BH-14 Bldg. Oil Sumps/Tanks 08/07/1995 7.0 - 8.0 ft. mg/Kg	BH-15 Bldg. Oil Sumps/Tanks 08/02/1995 7.0 - 9.0 ft. mg/Kg	BH-17 Bldg. Oil Sumps/Tanks 08/03/1995 5.0 - 7.0 ft. mg/Kg
Oil and Grease	NC	---	---	---	---	---	---	---
SAE 30W	NC	320	120 J	32000	52000	80000	24000	280

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	BH-18 Bldg. Oil Sumps/Tanks 08/04/1995 7.0 - 7.9 ft. mg/Kg	BH-19 Bldg. Oil Sumps/Tanks 08/07/1995 8.0 - 9.0 ft. mg/Kg	BH-20 Bldg. Oil Sumps/Tanks 08/08/1995 7.0 - 8.0 ft. mg/Kg	BH-21 Bldg. Oil Sumps/Tanks 08/08/1995 8.0 - 9.0 ft. mg/Kg	BH-22 Bldg. Oil Sumps/Tanks 08/04/1995 8.0 - 9.0 ft. mg/Kg	BH-23 Bldg. Oil Sumps/Tanks 08/04/1995 7.0 - 7.7 ft. mg/Kg	BH-25 Bldg. Oil Sumps/Tanks 04/01/1996 3.0 - 5.3 ft. mg/Kg
Oil and Grease		NC	---	---	---	---	---	---	---
SAE 30W		NC	13000	16000	17000	11000	44000	11000	370

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	BH-26 Bldg. Oil Sumps/Tanks 04/01/1996 5.0 - 7.0 ft. mg/Kg	BH-27 Bldg. Oil Sumps/Tanks 04/02/1996 7.5 - 9.0 ft. mg/Kg	BH-28 Bldg. Oil Sumps/Tanks 04/02/1996 7.5 - 9.0 ft. mg/Kg	BH-29 Bldg. Oil Sumps/Tanks 04/02/1996 7.0 - 8.5 ft. mg/Kg	BH-30 Bldg. Oil Sumps/Tanks 04/02/1996 8.5 - 9.5 ft. mg/Kg	BH-39 Bldg. Oil Sumps/Tanks 04/04/1996 13.0 - 13.8 ft. mg/Kg	BH-41 Bldg. Oil Sumps/Tanks 04/09/1996 12.0 - 13.5 ft. mg/Kg
Oil and Grease		NC	---	---	---	---	---	---	---
SAE 30W		NC	2700	3000	2100	1600	48000	280	320

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	BH-42 Bldg. Oil Sumps/Tanks 04/10/1996 7.0 - 7.7 ft. mg/Kg	BH-43 Bldg. Oil Sumps/Tanks 04/10/1996 11.0 - 12.5 ft. mg/Kg	BH-45 Bldg. Oil Sumps/Tanks 04/10/1996 15.0 - 17.0 ft. mg/Kg	BH-50 Bldg. Oil Sumps/Tanks 04/12/1996 10.0 - 10.8 ft. mg/Kg	WT-10 IWT Area 12/10/1985 1.5 - 3.0 ft. mg/Kg	WT-10 IWT Area 12/10/1985 3.0 - 4.5 ft. mg/Kg	WT-10 IWT Area 12/10/1985 4.5 - 6.0 ft. mg/Kg
Oil and Grease		NC	---	---	---	---	440	360	280
SAE 30W		NC	7300	5000	430	350	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	WT-11 IWT Area 12/16/1985 2.0 - 4.0 ft. mg/Kg	WT-11 IWT Area 12/16/1985 4.0 - 6.0 ft. mg/Kg	WT-11 IWT Area 12/16/1985 6.0 - 8.0 ft. mg/Kg	WT-12 IWT Area 12/17/1985 4.0 - 6.0 ft. mg/Kg	WT-12 IWT Area 12/17/1985 6.0 - 8.0 ft. mg/Kg	WT-13 IWT Area 12/17/1985 2.0 - 4.0 ft. mg/Kg	WT-13 IWT Area 12/17/1985 4.0 - 6.0 ft. mg/Kg
Oil and Grease		NC	380	160	280	200	220	180	280
SAE 30W		NC	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	WT-14 IWT Area 12/17/1985 1.0 - 2.0 ft. mg/Kg	WT-14 IWT Area 12/17/1985 6.0 - 8.0 ft. mg/Kg	WT-14 IWT Area 12/17/1985 8.0 - 10.0 ft. mg/Kg	WT-15 IWT Area 12/17/1985 2.0 - 3.5 ft. mg/Kg	WT-15 IWT Area 12/17/1985 4.0 - 5.5 ft. mg/Kg	WT-15 IWT Area 12/17/1985 5.5 - 7.0 ft. mg/Kg	OBG-1 LC PCB Dredgings Site 11/24/1986 0 - 2 ft. mg/Kg
Oil and Grease		NC	160	220	80	80	100	100	552
SAE 30W		NC	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	OBG-1 LC PCB Dredgings Site 11/24/1986 2 - 4 ft. mg/Kg	OBG-1 LC PCB Dredgings Site 11/24/1986 4 - 6 ft. mg/Kg	OBG-1 LC PCB Dredgings Site 11/24/1986 8 - 10 ft. mg/Kg	OBG-2 LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg	OBG-2 LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg	OBG-2 LC PCB Dredgings Site 11/20/1986 6 - 8 ft. mg/Kg	OBG-3 LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg
Oil and Grease		NC	60	180	185	1013	306	697	1638
SAE 30W		NC	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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RACER0060573

O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	OBG-3 LC PCB Dredgings Site 11/20/1986 10 - 12 ft. mg/Kg	OBG-3 LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg	OBG-3 LC PCB Dredgings Site 11/20/1986 4 - 6 ft. mg/Kg	OBG-3 LC PCB Dredgings Site 11/20/1986 8 - 10 ft. mg/Kg	OBG-4 LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg	OBG-4 LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg	OBG-4 LC PCB Dredgings Site 11/20/1986 6 - 8 ft. mg/Kg
Oil and Grease		NC	1179	4506	5440	494	8305	2097	52
SAE 30W		NC	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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RACER0060574

O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	OBG-4 LC PCB Dredgings Site 11/20/1986 8 - 10 ft. mg/Kg	OBG-5 LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg	OBG-5 LC PCB Dredgings Site 11/20/1986 10 - 12 ft. mg/Kg	OBG-5 LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg	OBG-5 LC PCB Dredgings Site 11/20/1986 4 - 6 ft. mg/Kg	OBG-5 LC PCB Dredgings Site 11/20/1986 6 - 8 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 0 - 2 ft. mg/Kg
Oil and Grease		NC	439	113	57	370	79	32	622
SAE 30W		NC	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	OBG-6 LC PCB Dredgings Site 11/10/1986 10 - 12 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 12 - 14 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 14 - 16 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 16 - 18 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 2 - 4 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 4 - 6 ft. mg/Kg	OBG-6 LC PCB Dredgings Site 11/10/1986 6 - 8 ft. mg/Kg
Oil and Grease		NC	480	420	558	481	924	8893	3493
SAE 30W		NC	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	OBG-6 LC PCB Dredgings Site 11/10/1986 8 - 10 ft. mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 10 - 12 ft. mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 4 - 6 ft. mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 6 - 8 ft. mg/Kg	OBG-7A LC PCB Dredgings Site 11/20/1986 8 - 10 ft. mg/Kg
Oil and Grease		NC	1805	284	221	2650	520	215	287
SAE 30W		NC	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Sample ID Area Sample Date Sample Depth Units Compound	TAGM Recommended Soil Cleanup	OBG-7B LC PCB Dredgings Site 11/20/1986 0 - 2 ft. mg/Kg	OBG-7B LC PCB Dredgings Site 11/20/1986 10 - 12 ft. mg/Kg	OBG-7B LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg	OBG-7B LC PCB Dredgings Site 11/20/1986 4 - 6 ft. mg/Kg	OBG-7B LC PCB Dredgings Site 11/20/1986 6 - 8 ft. mg/Kg	OBG-7B LC PCB Dredgings Site 11/20/1986 8 - 10 ft. mg/Kg	OBG-7C LC PCB Dredgings Site 11/20/1986 2 - 4 ft. mg/Kg
Oil and Grease	NC	262	205	62	99	5459	45	667
SAE 30W	NC	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-6
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Oil & Grease and Petroleum Hydrocarbon Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup	OBG-7C LC PCB Dredgings Site 11/20/1986 4 - 6 ft. mg/Kg	OBG-7C LC PCB Dredgings Site 11/20/1986 6 - 8 ft. mg/Kg	OBG-7C LC PCB Dredgings Site 11/20/1986 8 - 10 ft. mg/Kg	003-1 N. Property Area 12/05/1985 2.0 - 4.0 ft. mg/Kg	003-1 N. Property Area 12/05/1985 4.0 - 6.0 ft. mg/Kg	003-1 N. Property Area 12/05/1985 8.0 - 10.0 ft. mg/Kg
Oil and Grease		NC	815	56	171	400	900	200
SAE 30W		NC	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	BH-10 COMP Bldg. Paint Room 08/09/1995 1.0 - 2.0 ft. mg/Kg	BH-46 Bldg. Paint Room 04/11/1996 4.0 - 5.0 ft. mg/Kg	BH-47 Bldg. Paint Room 04/11/1996 4.0 - 6.0 ft. mg/Kg	OBG-TB-12 Bldg. Paint Room 07/13/1999 11 - 13 ft. mg/Kg	OBG-TB-12 Bldg. Paint Room 07/13/1999 5 - 7 ft. mg/Kg	OBG-TB-13 Bldg. Paint Room 07/14/1999 15 - 17 ft. mg/Kg	OBG-TB-13 Bldg. Paint Room 07/14/1999 7 - 9 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	---	2.9 J	4.9 J	2.6	3.6	3.1	4.3
Barium		300	---	69 J	64.2 J	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	0.28	0.29	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	12 J	13.1	15.2	38.1 J	20.5 J	11.7 J	11.6 J
Cobalt		30	---	---	---	---	---	---	---
Copper		25	8 J	---	---	14.6	19.1	[86.5]	[60.5]
Iron		2000	---	---	---	---	---	---	---
Lead		400	---	7.7	8.1	4.9	7.3	4.3	4.2
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	8.3 J	[16.8]	[19.9]	[13.8]	[19.7]	[13.9]	[13.7]
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	0.56 J	0.43 J	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	247 J	2.2 J
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	---	---	---	[32.5]	[49.6]	[26.4]	[28.2]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-13 Bldg. Paint Room 07/14/1999 9 - 11 ft. mg/Kg	OBG-TB-16 Bldg. Paint Room 07/19/1999 1 - 3 ft. mg/Kg	OBG-TB-16 Bldg. Paint Room 07/19/1999 5 - 7 ft. mg/Kg	OBG-TB-17 Bldg. Paint Room 07/19/1999 10 - 12 ft. mg/Kg	OBG-TB-17 Bldg. Paint Room 07/19/1999 4 - 8 ft. mg/Kg	BH-4 COMP Bldg. Plating Area 08/08/1995 1.0 - 5.0 ft. mg/Kg	BH-5 Bldg. Plating Area 08/10/1995 1.0 - 3.0 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	5.8	3.6	6.5	2.5	4.2	---	---
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	10.8 J	10.2 J	[74.5 J]	13.2 J	15.6 J	31 J	21 J
Cobalt		30	---	---	---	---	---	---	---
Copper		25	17.8	20.1	[207]	[331]	[689]	[30 J]	21 J
Iron		2000	---	---	---	---	---	---	---
Lead		400	3.6	5	8.9	4.5	6.3	---	---
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[15.4]	[14.7]	[145]	[19]	[31.4]	[32 J]	[23 J]
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	7.1 J	58.9 J	614 J	3.1	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[25]	[30]	[52.2]	[29.6]	[38.3]	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	BH-6 COMP Bldg. Plating Area 08/09/1995 1.0 - 2.0 ft. mg/Kg	BH-7 COMP Bldg. Plating Area 08/09/1995 1.0 - 2.0 ft. mg/Kg	BH-9 COMP Bldg. Plating Area 08/09/1995 3.0 - 5.0 ft. mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 12 - 14 ft. mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 14 - 16 ft. mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 3 - 5 ft. mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 5 - 7 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	---	---	---	4.7	5.4	5.6	2.6
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	18 J	[120 J]	10 J	23.3 J	19.9 J	30.6 J	13.7 J
Cobalt		30	---	---	---	---	---	---	---
Copper		25	21 J	[43 J]	[38 J]	19.9	21.1	23.7	9.5
Iron		2000	---	---	---	---	---	---	---
Lead		400	---	---	---	7.8	8.7	10.8	6.1
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[49 J]	[4000 J]	[14 J]	[20.6]	[30]	[28.6]	11.3
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	11	---	---	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	---	---	---	[48.6]	[48.2]	[66.8]	[56.9]

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NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 7 - 9 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 10 - 12 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 2 - 4 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 4 - 6 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 6 - 8 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 8 - 10 ft. mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 2 - 4 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	6	1.7	7.2	4.8	3.8	3.7	1.6
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	27.3 J	7.1 J	9 J	12.3 J	15.1 J	17.8 J	7.8 J
Cobalt		30	---	---	---	---	---	---	---
Copper		25	20.7	12.4	9.3	10.6	14.8	17.3	4.8
Iron		2000	---	---	---	---	---	---	---
Lead		400	9.6	3	4.6	4.3	5.5	6.6	2.9
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[33.2]	7	[15.5]	12.5	12.4	[17.3]	5.9 J
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[62.1]	14.4	11.2	[21.2]	[40]	[47]	[42.3]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 4 - 6 ft. mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 6 - 8 ft. mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 1 - 3 ft. mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 5 - 7 ft. mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 7 - 9 ft. mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 9 - 11 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 1 - 3 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	3.3	3.4	3.2	3.6	5.2	2.3	2.5
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	13.3 J	28.7 J	13.6 J	12.2 J	30.5 J	13.7 J	12.3 J
Cobalt		30	---	---	---	---	---	---	---
Copper		25	15.4	24.2	12.5	11.1	[29]	14.2	9
Iron		2000	---	---	---	---	---	---	---
Lead		400	13.2	32.5	7.6	6.7	10.9	4.9	5.7
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[15.4]	[26.4]	12.3	11.9	[29.6]	12.3	10.1
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[36.3]	[54.4]	[38.6]	[29.5]	[59.9]	[28.6]	[44.6]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 3 - 5 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 5 - 7 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 7 - 9 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 9 - 11 ft. mg/Kg	HA-10 IWT Area 08/10/1995 10.5 - 12.0 ft. mg/Kg	HA-11 IWT Area 08/10/1995 4.0 - 4.6 ft. mg/Kg	HA-12 IWT Area 08/11/1995 10.0 - 10.5 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	3.6	3.5	4.2	6.2	---	---	1.8
Barium		300	---	---	---	---	---	---	37
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	0.63	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	15.1 J	14.5 J	17.7 J	34.6 J	3.1 J	44 J	20 J
Cobalt		30	---	---	---	---	---	---	---
Copper		25	18.9	9.8	11.4	[30.7]	10 J	[37 J]	---
Iron		2000	---	---	---	---	---	---	---
Lead		400	10.3	6.5	4.8	11.8	---	---	4.7
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[14.4]	11.9	12.9	[34.1]	5 J	[32 J]	---
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	0.92	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[28.8]	[27.4]	[30.5]	[67]	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	HA-9 IWT Area 08/10/1995 6.0 - 7.0 ft. mg/Kg	SS-99-22 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-23 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-24 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-25 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-26 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-27 IWT Area 10/27/1999 0 - 1 ft. mg/Kg
Aluminum		SB	---	---	---	9570	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	---	4.6	5.8	4.6	6.7	[27.1]	[13.7]
Barium		300	---	---	---	65.9	---	---	---
Beryllium		0.16	---	---	---	[0.47 J]	---	---	---
Cadmium		10	---	---	---	0.2 J	---	---	---
Calcium		SB	---	---	---	53900	---	---	---
Chromium		50	6.9 J	17.8	20.8	22.9 J	18.3	[32000]	36.6
Cobalt		30	---	---	---	6	---	---	---
Copper		25	13 J	19.9	19	17.6	[37.2]	[4790]	25
Iron		2000	---	---	---	[16900]	---	---	---
Lead		400	---	12.5	7.9	9.3	7	[717]	12.3
Magnesium		SB	---	---	---	17800	---	---	---
Manganese		SB	---	---	---	404	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	9.6 J	[19.1]	[17.3]	[17]	[18.5]	[6630]	[27.8]
Potassium		SB	---	---	---	2300	---	---	---
Selenium		2	---	---	---	0.63	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	228	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	1.6	---
Vanadium		150	---	---	---	20.2	---	---	---
Zinc		20	---	[84.6]	[50.8]	[47.2]	[51.7]	[5880]	[110]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-28 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-29 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-30 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-31 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	OBG-TB-31 IWT Fuel Tank Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-31 IWT Fuel Tank Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-32 IWT Fuel Tank Area 10/19/1999 2 - 4 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	4.9	6	4.8	[13.9]	3.6	2	4.5
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	28.4	39	15.2	[59.1]	20.8	7.3	16.2
Cobalt		30	---	---	---	---	---	---	---
Copper		25	14.7	21.5	16	[37.8]	16.8	12.3	14.5
Iron		2000	---	---	---	---	---	---	---
Lead		400	33.2	33.2	17.3	45.6	6.7	2.9	5.7
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[16.9]	[26.8]	[14.9]	[41.2]	[19.2]	7.2	[15.1]
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[137]	[86.1]	[52.5]	[117]	[43.3]	15.9	[34.2]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-32 IWT Fuel Tank Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-43 IWT Fuel Tank Area 10/25/1999 2 - 4 ft. mg/Kg	OBG-TB-43 IWT Fuel Tank Area 10/25/1999 4 - 6 ft. mg/Kg	OBG-TB-44 IWT Fuel Tank Area 10/25/1999 2 - 4 ft. mg/Kg	OBG-TB-44 IWT Fuel Tank Area 10/25/1999 6 - 8 ft. mg/Kg	OBG-TB-30 IWT TCE Storage Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-30 IWT TCE Storage Area 10/19/1999 6 - 8 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	3.1	2.8	4.1	6.2	2.3	3.9	2.2
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	15	16.1 J	15 J	26.7 J	11 J	12.4	8.2
Cobalt		30	---	---	---	---	---	---	---
Copper		25	14.5	13	13.5	[44.3]	12.4	11.5	12.3
Iron		2000	---	---	---	---	---	---	---
Lead		400	5.5	5.1	5.2	18.8	3.9	4.7	3
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[14.3]	[13.7]	[14.9]	[55.9]	10.4	[14.1]	7.5
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[36.5]	[34.3]	[33.5]	[553 J]	[26.6]	[28.5]	18.4

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-38 IWT TCE Storage Area 10/21/1999 12 - 14 ft. mg/Kg	OBG-TB-38 IWT TCE Storage Area 10/21/1999 4 - 6 ft. mg/Kg	B-17 N. Property Area 10/05/1990 5.0 - 7.0 ft. mg/Kg	BH-1 N. Property Area 08/14/1995 9.0 - 10.0 ft. mg/Kg	BH-2 N. Property Area 08/14/1995 8.0 - 10.0 ft. mg/Kg	BH-3 N. Property Area 08/11/1995 14.0 - 14.5 ft. mg/Kg	OBG-TB-25 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	1.9	3.8	---	[48]	---	1.9	4.7
Barium		300	---	---	1.241	180	27	96	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	7.7 J	17.3 J	[78.323]	[52 J]	[2900 J]	23 J	46.6
Cobalt		30	---	---	---	---	---	---	---
Copper		25	12.4	10.6	---	[200 J]	[6600 J]	[37 J]	[36.7]
Iron		2000	---	---	---	---	---	---	---
Lead		400	3.1	3.8	0.471	12	31	10	13.3
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	[0.11]	---	---	---
Nickel		13	7.3	9.8	[24.523]	[140 J]	[1300 J]	[23 J]	[38.6]
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	[2.3 J]	1 J	0.87 J	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	0.86	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	16.3	[22.9]	---	---	---	---	[74.6]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-25 N. Property Area 10/19/1999 10 - 12 ft. mg/Kg	OBG-TB-25 N. Property Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-26 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg	OBG-TB-26 N. Property Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-26 N. Property Area 10/19/1999 6 - 8 ft. mg/Kg	OBG-TB-27 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg	OBG-TB-27 N. Property Area 10/19/1999 12 - 14 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	2.9	3.6	6.3	[9.9]	1.7	3.8	2.3
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	14.5	19	48.7	25.9	8.5	26.5	11.2
Cobalt		30	---	---	---	---	---	---	---
Copper		25	12.1	[49.2]	[32.1]	[62]	8.5	[28.2]	19.2
Iron		2000	---	---	---	---	---	---	---
Lead		400	5.1	8.5	21.2	23.8	3	18	4.3
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[14.3]	[18.9]	[35.1]	[26.6]	6.9	[54.1]	9.7
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[30.6]	[68.4]	[95.7]	[115]	14	[41.4]	[21.5]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-27 N. Property Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-28 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg	OBG-TB-28 N. Property Area 10/19/1999 12 - 14 ft. mg/Kg	OBG-TB-28 N. Property Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-29 N. Property Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-29 N. Property Area 10/19/1999 6 - 8 ft. mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 0 - 2 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	4.3	2.5	5	3.7	2.6	2.5	3.2
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	23.2	9.2	[106]	22.6	15.4	9.9	10.9 J
Cobalt		30	---	---	---	---	---	---	---
Copper		25	[32.9]	12.6	[47.9]	19.4	7.1	7.1	12.5
Iron		2000	---	---	---	---	---	---	---
Lead		400	17.2	3.8	10.6	8.2	3.6	4.2	3.7
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[21.3]	10.3	[50.5]	[23.4]	12.3	9.1	9.8
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	2	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[212]	[29.2]	[66.6]	[50]	15.1	[49.2]	[26.6]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 10 - 12 ft. mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 34 - 36 ft. mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 6 - 8 ft. mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 0 - 1 ft. mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 10 - 12 ft. mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 32 - 34 ft. mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 6 - 8 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	2.8	1.9	5.1	3.3	2.7	3.7	6
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	8.5 J	8.4 J	29.4 J	14.8 J	10.9 J	19.9 J	30.1 J
Cobalt		30	---	---	---	---	---	---	---
Copper		25	12.9	9.6	22.7	13.7	10.8	14.7	23.6
Iron		2000	---	---	---	---	---	---	---
Lead		400	3.1	2.9	9.9	8.1	3.6	6	10.4
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	7.4	7.3	[26.3]	[13.1]	10.9	[16.5]	[28.5]
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	16.2	17.8	[53.7]	[52.7]	[21.4]	[35]	[54.3]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

RACER0060592

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units: TAGM Recommended Soil Cleanup mg/Kg	SS-99-06 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-07 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-08 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-09 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-10 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-11 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-12 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg
Aluminum	SB	---	---	---	---	11800	---	---
Antimony	SB	---	---	---	---	---	---	---
Arsenic	7.5	[10.5]	4.5	4.5	2.9	[14.6]	[15]	2.7
Barium	300	---	---	---	---	228	---	---
Beryllium	0.16	---	---	---	---	[0.94 J]	---	---
Cadmium	10	---	---	---	---	0.3 J	---	---
Calcium	SB	---	---	---	---	16900	---	---
Chromium	50	[1770]	26.4	[76.2]	41	40.2 J	21.6	14.2
Cobalt	30	---	---	---	---	6.2 J	---	---
Copper	25	[267]	[30.3]	[59.3]	[96.2]	[31.7]	21.3	11.8
Iron	2000	---	---	---	---	[31200]	---	---
Lead	400	40.6	13.1	17	45.5	31.7	15.5	7.8
Magnesium	SB	---	---	---	---	7040	---	---
Manganese	SB	---	---	---	---	228	---	---
Mercury	0.1	0.095	---	0.029 J	0.054	0.069	---	---
Nickel	13	[443]	[21.9]	[121]	[32.6]	[35.4]	[20.6]	11.8
Potassium	SB	---	---	---	---	1550	---	---
Selenium	2	---	---	---	---	[2.4]	---	---
Silver	SB	---	---	---	---	---	---	---
Sodium	SB	---	---	---	---	568	---	---
Thallium	SB	---	---	---	---	0.4 J	---	---
Cyanide	NC	1	---	0.98	---	---	---	---
Vanadium	150	---	---	---	---	28.1	---	---
Zinc	20	[394]	[63.5]	[109]	[307]	[84.1]	[35.7]	[25]

RACER0060593

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-13 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	T01-1 N. Property Trench 11/01/1999 8 ft. mg/Kg	T01-2 N. Property Trench 11/01/1999 8 ft. mg/Kg	T01-3 N. Property Trench 11/02/1999 8.5 ft. mg/Kg	T01-4 N. Property Trench 11/02/1999 9 ft. mg/Kg	T02-1 N. Property Trench 11/03/1999 8 ft. mg/Kg	T02-2 N. Property Trench 11/03/1999 5.5 ft. mg/Kg
Aluminum		SB	8360	---	---	---	---	11500	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	4.2	[14.5]	[9.4]	4.2	4.3	[65.7]	[21.1]
Barium		300	65.2	---	---	---	---	[311]	---
Beryllium		0.16	[0.44 J]	---	---	---	---	[0.95 J]	---
Cadmium		10	0.22 J	---	---	---	---	---	---
Calcium		SB	76600	---	---	---	---	23600	---
Chromium		50	37.9 J	[95.8]	[512]	27.9	19.1	33.5	[2560]
Cobalt		30	6	---	---	---	---	6.3	---
Copper		25	22.1	[114]	[23200]	[76.2]	22.1	[168]	[3140]
Iron		2000	[14300]	---	---	---	---	[45900]	---
Lead		400	8.2	59.5	291	21.2	7.3	8	23.5
Magnesium		SB	19200	---	---	---	---	3540	---
Manganese		SB	383	---	---	---	---	213	---
Mercury		0.1	---	0.06 J	[0.16]	0.036 J	0.035 J	[0.13]	0.085 J
Nickel		13	[72.7]	[167]	[1180]	[56]	[22.2]	[82.6]	[533]
Potassium		SB	2210	---	---	---	---	1120	---
Selenium		2	0.54 J	---	---	---	---	[2.9]	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	204	---	---	---	---	369	---
Thallium		SB	---	---	---	---	---	0.97 J	---
Cyanide		NC	---	---	1.2	---	---	---	57.7
Vanadium		150	20.4	---	---	---	---	24.2	---
Zinc		20	[67.1]	[468]	[24000]	[789]	[52.1]	[461]	[348]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T02-3 N. Property Trench 11/03/1999 9 ft. mg/Kg	T02-4 N. Property Trench 11/04/1999 5 ft. mg/Kg	T03-1 N. Property Trench 11/03/1999 6 ft. mg/Kg	T03-2 N. Property Trench 11/03/1999 7 ft. mg/Kg	T03-3 N. Property Trench 11/05/1999 5.5 ft. mg/Kg	T03-4 N. Property Trench 11/05/1999 6 ft. mg/Kg	T03-5 N. Property Trench 11/05/1999 4 ft. mg/Kg
Aluminum		SB	---	---	---	3670	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	[16]	4.3	[45.5]	6.5	7.3	[7.7]	[16.7]
Barium		300	---	---	---	83	---	---	---
Beryllium		0.16	---	---	---	[0.19 J]	---	---	---
Cadmium		10	---	---	---	0.78 J	---	---	---
Calcium		SB	---	---	---	264000	---	---	---
Chromium		50	[17200]	29.1	[181]	39.6	[778]	[794]	[409]
Cobalt		30	---	---	---	2.2 J	---	---	---
Copper		25	[3530]	[34.7]	[1450]	[1520]	[5410]	[4520]	[2130]
Iron		2000	---	---	---	[10100]	---	---	---
Lead		400	44.5	11.5	22	213	79.4	61.1	51.1
Magnesium		SB	---	---	---	8770	---	---	---
Manganese		SB	---	---	---	235	---	---	---
Mercury		0.1	[0.14 J]	0.027 J	[0.12 J]	0.055 J	0.043 J	0.033 J	0.078 J
Nickel		13	[7940]	[25.1]	[506]	[242]	[1040]	[1040]	[635]
Potassium		SB	---	---	---	32.5 J	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	0.23 J	---	---	---
Sodium		SB	---	---	---	5400	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	132	---	---	---	0.98	1.6	5.8
Vanadium		150	---	---	---	4 J	---	---	---
Zinc		20	[1440]	[63.7]	[2410]	[53300]	[8470]	[7990]	[1800]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	T03-6 N. Property Trench 11/09/1999 4 ft. mg/Kg	T04-1 N. Property Trench 11/04/1999 2.5 ft. mg/Kg	T04-2 N. Property Trench 11/04/1999 6 ft. mg/Kg	T04-3 N. Property Trench 11/05/1999 3 ft. mg/Kg	T05-1 N. Property Trench 11/11/1999 3.5 ft. mg/Kg	T05-2 N. Property Trench 11/11/1999 3.5 ft. mg/Kg	T06-1 N. Property Trench 11/08/1999 8 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	4.7	[9.9]	[13.8]	[21]	2.6	3.3	5.2
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	34.2 J	[3170]	[436]	[355]	22.4 J	13.9 J	[3250 J]
Cobalt		30	---	---	---	---	---	---	---
Copper		25	22.6	[4990]	[3920]	[2010]	14.6	16.8	[781]
Iron		2000	---	---	---	---	---	---	---
Lead		400	26.6 J	185	243	174	5 J	12.2 J	25.3 J
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	0.059 J	[0.12 J]	0.064 J	[0.14]	---	---	---
Nickel		13	[23.1]	[3820]	[500]	[592]	[20.3]	13	[1580]
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	102	---	---	---	---	11.9
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[67.7 J]	[2520]	[1330]	[3510]	[33.9 J]	[33.6 J]	[547 J]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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RACER0060596

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T07-1 N. Property Trench 11/08/1999 8 ft. mg/Kg	T08-1 N. Property Trench 11/09/1999 9 ft. mg/Kg	T08-2 N. Property Trench 11/09/1999 9 ft. mg/Kg	T08-3 N. Property Trench 11/09/1999 8 ft. mg/Kg	T09-1 N. Property Trench 11/09/1999 10 ft. mg/Kg	T10-1 N. Property Trench 11/09/1999 5.5 ft. mg/Kg	T11-1 N. Property Trench 11/10/1999 8 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	[11]	[12.9]	[11.9]	4.5	3.4	4.4	[7.8]
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	[2480 J]	[2910 J]	[34900 J]	[775 J]	36 J	20 J	[2250 J]
Cobalt		30	---	---	---	---	---	---	---
Copper		25	[2460]	[541]	[6990]	[270]	19.4	15.5	[456]
Iron		2000	---	---	---	---	---	---	---
Lead		400	61.2 J	19.1 J	57.1 J	17.4 J	13 J	6.8 J	28.7 J
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[1190]	[1240]	[19700]	[584]	[20.6]	[19.3]	[1720]
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	1.3 J	13.2	0.68 J	6.2	---	13.2
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[496 J]	[422 J]	[4730 J]	[145 J]	[85.4 J]	[49 J]	[447 J]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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RACER0060597

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T12-1 N. Property Trench 11/10/1999 4 ft. mg/Kg	T12-2 N. Property Trench 11/10/1999 12 ft. mg/Kg	HA-2 NE Property Area 08/11/1995 10.5 - 11.0 ft. mg/Kg	OBG-TB-24 NE Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-24 NE Property Area 10/18/1999 6 - 8 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 0 - 1 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 12 - 14 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	5.6	[16.9]	2.8	4.6	3.4	5.7	3.5
Barium		300	---	---	70	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	[853 J]	[14200 J]	15 J	27.3	18.8	30.7 J	12.9 J
Cobalt		30	---	---	---	---	---	---	---
Copper		25	[1040]	[2920]	21 J	22.1	24.7	[37.1]	11.6
Iron		2000	---	---	---	---	---	---	---
Lead		400	52 J	208 J	6.8	10.8	11.8	31.9	4.5
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[514]	[14400]	[16 J]	[24.8]	[16.3]	[33.1]	12
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	11.8	166	---	---	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[565 J]	[2720 J]	---	[53.2]	[49]	[200]	[29]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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RACER0060598

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 22 - 24 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 6 - 8 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 12 - 14 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 22 - 24 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 6 - 8 ft. mg/Kg	SS-99-14 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-15 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	2.4	5	4.1	2.3	6.8	6.3	4.8
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	11.5 J	28.2 J	15.5 J	10.1 J	26.6 J	27.9	21.6
Cobalt		30	---	---	---	---	---	---	---
Copper		25	11.6	19.6	14.6	10.7	[25.9]	[27.2]	[25.9]
Iron		2000	---	---	---	---	---	---	---
Lead		400	4.1	8.5	6.5	3.8	11	29	25.2
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	10.4	[29.7]	[16.4]	9.3	[66]	[26]	[22]
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[26.8]	[57.9]	[36.7]	[23.5]	[56.8]	[158]	[153]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-16 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-17 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	HA-7 SE Property Area 08/10/1995 7.0 - 8.0 ft. mg/Kg	HA-8 SE Property Area 08/11/1995 5.5 - 7.0 ft. mg/Kg	OBG-TB-22 SE Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-22 SE Property Area 10/18/1999 6 - 8 ft. mg/Kg	OBG-TB-23 SE Property Area 10/18/1999 2 - 4 ft. mg/Kg
Aluminum		SB	---	14600	---	---	---	---	---
Antimony		SB	---	0.38 J	---	---	---	---	---
Arsenic		7.5	6	5.6	4.2	4	5.5	3.3	5.6
Barium		300	---	109	80	78	---	---	---
Beryllium		0.16	---	[0.67 J]	---	---	---	---	---
Cadmium		10	---	0.37 J	0.93	---	---	---	---
Calcium		SB	---	33000	---	---	---	---	---
Chromium		50	33.3	[61.2]	17 J	20 J	27.9	20	26.6
Cobalt		30	---	10.8	---	---	---	---	---
Copper		25	[30.2]	[65.1]	---	---	23.8	14.1	20.6
Iron		2000	---	[21500]	---	---	---	---	---
Lead		400	58.6	19.8	9	9	9.2	5.7	8.1
Magnesium		SB	---	12400	---	---	---	---	---
Manganese		SB	---	501	---	---	---	---	---
Mercury		0.1	---	0.036 J	---	---	---	---	---
Nickel		13	[29.1]	[97.8]	---	---	[26.9]	[16.1]	[24.9]
Potassium		SB	---	2530	---	---	---	---	---
Selenium		2	---	0.83	---	0.65 J	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	164	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	---	---
Vanadium		150	---	27.8	---	---	---	---	---
Zinc		20	[170]	[147]	---	---	[53.1]	[40.4]	[53.1]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-23 SE Property Area 10/18/1999 6 - 8 ft. mg/Kg	SS-99-18 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-19 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-20 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-21 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	OBG-TB-20 SW Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-20 SW Property Area 10/18/1999 4 - 6 ft. mg/Kg
Aluminum		SB	---	---	---	---	13300	---	---
Antimony		SB	---	---	---	---	1.4 J	---	---
Arsenic		7.5	3.6	[92.8]	4.9	5.8	[162]	2.1	2.3
Barium		300	---	---	---	---	82.5	---	---
Beryllium		0.16	---	---	---	---	[0.66 J]	---	---
Cadmium		10	---	---	---	---	1 J	---	---
Calcium		SB	---	---	---	---	23400	---	---
Chromium		50	14	31.4	22.7	21.5	26.6 J	7.4	7.9
Cobalt		30	---	---	---	---	8.4	---	---
Copper		25	13.4	[41.5]	19.8	[60.3]	[38]	16.5	16
Iron		2000	---	---	---	---	[23700]	---	---
Lead		400	5.3	48.3	10.8	31.3	50.8	2.8	3.5
Magnesium		SB	---	---	---	---	9610	---	---
Manganese		SB	---	---	---	---	474	---	---
Mercury		0.1	---	---	---	---	0.025 J	---	---
Nickel		13	[13.9]	[54]	[21]	[20.3]	[38]	12.7	12.9
Potassium		SB	---	---	---	---	2490	---	---
Selenium		2	---	---	---	---	1.4	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	177	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	0.68	---
Vanadium		150	---	---	---	---	27.9	---	---
Zinc		20	[31.9]	[892]	[53.1]	[129]	[440]	14	16.6

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

RACER0060601

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 0 - 1 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 5 - 6 ft. mg/Kg	OBG-TB-33 SW Property Area 10/20/1999 5 - 6 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 0 - 1 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 10 - 12 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 4 - 6 ft. mg/Kg
Aluminum		SB	---	---	---	---	---	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	3.2	4.2	4.4	2.4	2.2	1.9	2.4
Barium		300	---	---	---	---	---	---	---
Beryllium		0.16	---	---	---	---	---	---	---
Cadmium		10	---	---	---	---	---	---	---
Calcium		SB	---	---	---	---	---	---	---
Chromium		50	[75]	14.4	14.6	13.7 J	14.3 J	11.6 J	14.1 J
Cobalt		30	---	---	---	---	---	---	---
Copper		25	[25.8]	20.7	14.2	11.8	8.5	11	9.1
Iron		2000	---	---	---	---	---	---	---
Lead		400	24.5	5.7	5.5	4.9	11.2	2.9	6.7
Magnesium		SB	---	---	---	---	---	---	---
Manganese		SB	---	---	---	---	---	---	---
Mercury		0.1	---	---	---	---	---	---	---
Nickel		13	[30.6]	[14.6]	[14.7]	11.5	[13.1]	8.1	[15.2]
Potassium		SB	---	---	---	---	---	---	---
Selenium		2	---	---	---	---	---	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	---	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	0.73	---	---	---	---
Vanadium		150	---	---	---	---	---	---	---
Zinc		20	[73.4]	[28.3]	[31.7]	[28.4]	[43]	15.1	[38.9]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 0 - 1 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 4 - 6 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 8 - 10 ft. mg/Kg	SS-99-01 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-02 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-03 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-04 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg
Aluminum		SB	---	---	---	---	8930	---	---
Antimony		SB	---	---	---	---	---	---	---
Arsenic		7.5	2.2	2.4	1.7	5.8	4.7	3.6	3.5
Barium		300	---	---	---	---	48.4	---	---
Beryllium		0.16	---	---	---	---	[0.45 J]	---	---
Cadmium		10	---	---	---	---	0.44 J	---	---
Calcium		SB	---	---	---	---	16700	---	---
Chromium		50	12.2 J	20.7 J	24.1 J	[180]	21.6 J	[108]	[134]
Cobalt		30	---	---	---	---	5.4 J	---	---
Copper		25	6.9	10.5	11.8	[35.8]	[39.1]	19.9	[73]
Iron		2000	---	---	---	---	[15000]	---	---
Lead		400	4.8	4.4	3	115	26	46.5	148
Magnesium		SB	---	---	---	---	8180	---	---
Manganese		SB	---	---	---	---	303	---	---
Mercury		0.1	---	---	---	---	0.042	---	---
Nickel		13	9.9	[18.4]	8.4	[45.8]	[40.3]	[83.8]	[506]
Potassium		SB	---	---	---	---	1460	---	---
Selenium		2	---	---	---	---	0.98	---	---
Silver		SB	---	---	---	---	---	---	---
Sodium		SB	---	---	---	---	109 J	---	---
Thallium		SB	---	---	---	---	---	---	---
Cyanide		NC	---	---	---	---	---	---	---
Vanadium		150	---	---	---	---	19.1	---	---
Zinc		20	[39.6]	[29.1]	19.4	[1500]	[123]	[94.9]	[2090]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-7
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Metals Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-05 Thinner Tank Area 10/26/1999 0 - 1 ft. mg/Kg
Aluminum		SB	13600
Antimony		SB	---
Arsenic		7.5	4.6
Barium		300	69.3
Beryllium		0.16	[0.63 J]
Cadmium		10	0.22 J
Calcium		SB	8090
Chromium		50	19.5 J
Cobalt		30	9.1
Copper		25	18.5
Iron		2000	[20500]
Lead		400	13.7
Magnesium		SB	5780
Manganese		SB	524
Mercury		0.1	0.029 J
Nickel		13	[18.2]
Potassium		SB	1960
Selenium		2	1.2
Silver		SB	---
Sodium		SB	97.5 J
Thallium		SB	---
Cyanide		NC	---
Vanadium		150	25.8
Zinc		20	[56.8]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

RACER0060604

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-12 Bldg. Paint Room 07/13/1999 11 - 13 ft. mg/Kg	OBG-TB-12 Bldg. Paint Room 07/13/1999 5 - 7 ft. mg/Kg	OBG-TB-13 Bldg. Paint Room 07/14/1999 15 - 17 ft. mg/Kg	OBG-TB-13 Bldg. Paint Room 07/14/1999 7 - 9 ft. mg/Kg	OBG-TB-13 Bldg. Paint Room 07/14/1999 9 - 11 ft. mg/Kg	OBG-TB-16 Bldg. Paint Room 07/19/1999 1 - 3 ft. mg/Kg	OBG-TB-16 Bldg. Paint Room 07/19/1999 5 - 7 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	---	---	---
Methylene chloride		0.1	---	---	---	---	---	---	---
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	---	---	---	---	---
Trichloroethene		0.7	[22]	[4.4]	0.039	0.032	[5]	0.069	[0.91]
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	[4.1]	---	0.096	0.071	---	0.005	---
trans-1,2-Dichloroethene		0.3	---	---	0.087	0.065	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-17 Bldg. Paint Room 07/19/1999 10 - 12 ft. mg/Kg	OBG-TB-17 Bldg. Paint Room 07/19/1999 4 - 8 ft. mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 5 - 7 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 10 - 12 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 2 - 4 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 4 - 6 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 6 - 8 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	0.041 NJ	---	---
Methylene chloride		0.1	---	---	---	---	0.006 NJ	---	---
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	0.001	---	---	---	---
Toluene		1.5	---	0.001	---	---	---	---	---
Trichloroethene		0.7	---	0.038	---	[3.3]	0.11 J	0.015 J	0.011
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	[2.8]	0.017	---	---	0.008 J	0.003 J	0.005
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

RACER0060607

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 10 - 12 ft. mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 2 - 4 ft. mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 4 - 6 ft. mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 6 - 8 ft. mg/Kg	OBG-TB-05 Bldg. Sump #6 07/09/1999 8 - 10 ft. mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 1 - 3 ft. mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 5 - 7 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	---	---	---
Methylene chloride		0.1	0.025 N	0.012 N	0.003 N	0.003 N	0.023 N	---	---
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	---	---	---	---	---
Trichloroethene		0.7	0.019	0.007	0.003	0.006	0.008	0.005	0.005
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	0.003	0.002	---	---	0.001	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 7 - 9 ft. mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 9 - 11 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 1 - 3 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 3 - 5 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 9 - 11 ft. mg/Kg	SS-99-22 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-23 IWT Area 10/27/1999 0 - 1 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	---	---	---
Methylene chloride		0.1	---	0.002 N	0.002 N	0.002 N	0.002 N	0.011 N	0.003 N
Ethylbenzene		5.5	0.053 N	---	---	---	0.009	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	---	---	---	---	---
Trichloroethene		0.7	---	0.008	---	---	---	---	---
Xylene (total)		1.2	0.26 N	---	---	---	0.068	---	---
cis-1,2-Dichloroethene		0.25	0.017	0.027	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-26 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-27 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-28 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-29 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-30 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-31 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	OBG-TB-31 IWT Fuel Tank Area 10/19/1999 2 - 4 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	---	---	---
Methylene chloride		0.1	0.05 N	0.014 NJ	0.035 NJ	0.006 N	0.005 N	0.003 N	0.005 N
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	0.001 NJ	---	---	---	---
Trichloroethene		0.7	---	---	---	---	---	---	0.009
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-31 IWT Fuel Tank Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-32 IWT Fuel Tank Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-43 IWT Fuel Tank Area 10/25/1999 2 - 4 ft. mg/Kg	OBG-TB-43 IWT Fuel Tank Area 10/25/1999 4 - 6 ft. mg/Kg	OBG-TB-44 IWT Fuel Tank Area 10/25/1999 2 - 4 ft. mg/Kg	OBG-TB-44 IWT Fuel Tank Area 10/25/1999 6 - 8 ft. mg/Kg	OBG-TB-30 IWT TCE Storage Area 10/19/1999 4 - 6 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	0.013
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	---	---	---
Methylene chloride		0.1	0.018 N	0.002 N	0.001 N	0.002 N	---	0.003 N	---
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	---	---	---	---	---
Trichloroethene		0.7	---	0.007	0.002	0.003	0.002 J	0.015	---
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	0.008	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-30 IWT TCE Storage Area 10/19/1999 6 - 8 ft. mg/Kg	OBG-TB-38 IWT TCE Storage Area 10/21/1999 12 - 14 ft. mg/Kg	OBG-TB-38 IWT TCE Storage Area 10/21/1999 4 - 6 ft. mg/Kg	OBG-TB-25 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg	OBG-TB-25 N. Property Area 10/19/1999 10 - 12 ft. mg/Kg	OBG-TB-25 N. Property Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-26 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg
1,1-Dichloroethane		0.2	0.036 NJ	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	---	0.006 N	---
Methylene chloride		0.1	---	0.023 NJ	0.039 N	0.003 N	0.002 NJ	0.007 N	0.003 N
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	0.003 N	---	---	---	---
Trichloroethene		0.7	0.22	---	0.001	---	---	---	---
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	0.044	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-26 N. Property Area 10/19/1999 6 - 8 ft. mg/Kg	OBG-TB-27 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg	OBG-TB-27 N. Property Area 10/19/1999 12 - 14 ft. mg/Kg	OBG-TB-27 N. Property Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-28 N. Property Area 10/19/1999 0 - 1 ft. mg/Kg	OBG-TB-28 N. Property Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-29 N. Property Area 10/19/1999 2 - 4 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	---	---	---
Methylene chloride		0.1	0.001 N	0.002 N	0.003 N	0.015 N	0.014 N	0.01 N	0.018 N
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	---	---	---	---	---
Trichloroethene		0.7	---	---	---	---	---	---	---
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Sample ID Area Sample Date Sample Depth Units Compound	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-29 N. Property Area 10/19/1999 6 - 8 ft. mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 0 - 2 ft. mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 10 - 12 ft. mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 34 - 36 ft. mg/Kg	OBG-TB-41 N. Property Area 10/21/1999 6 - 8 ft. mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 0 - 1 ft. mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 10 - 12 ft. mg/Kg
1,1-Dichloroethane	0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene	7.9	---	---	---	---	---	---	---
Benzene	0.06	---	---	---	---	---	---	---
Chlorobenzene	1.7	---	---	---	---	---	---	---
Chloroform	0.3	---	---	---	---	---	---	---
Methylene chloride	0.1	0.002 N	0.037 N	0.003 N	---	0.037 N	0.004 N	0.002 N
Ethylbenzene	5.5	---	---	---	---	---	---	---
Tetrachloroethene	1.4	---	---	---	---	---	---	---
Toluene	1.5	---	---	---	---	0.001 N	---	---
Trichloroethene	0.7	---	---	0.004	[1.2]	---	---	---
Xylene (total)	1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 32 - 34 ft. mg/Kg	OBG-TB-42 N. Property Area 10/25/1999 6 - 8 ft. mg/Kg	SS-99-06 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-07 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-08 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-09 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-11 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	0.019 N	---	---
Methylene chloride		0.1	0.003 N	0.003 N	0.006 N	0.004 N	0.014 N	0.002 NJ	0.016 N
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	---	---	---	---	---
Trichloroethene		0.7	---	---	---	---	0.004	---	---
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Sample ID Area Sample Date Sample Depth Units Compound	TAGM Recommended Soil Cleanup mg/Kg	SS-99-12 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	T01-2 N. Property Trench 11/01/1999 8 ft. mg/Kg	T01-4 N. Property Trench 11/02/1999 9 ft. mg/Kg	T02-2 N. Property Trench 11/03/1999 5.5 ft. mg/Kg	T02-4 N. Property Trench 11/04/1999 5 ft. mg/Kg	T03-1 N. Property Trench 11/03/1999 6 ft. mg/Kg	T03-4 N. Property Trench 11/05/1999 6 ft. mg/Kg
1,1-Dichloroethane	0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene	7.9	---	---	---	---	---	---	---
Benzene	0.06	---	---	---	0.001 J	---	---	---
Chlorobenzene	1.7	---	---	---	---	---	---	---
Chloroform	0.3	---	---	---	---	---	---	---
Methylene chloride	0.1	0.017 N	---	---	---	0.002 N	---	---
Ethylbenzene	5.5	---	[11 NJ]	---	---	---	---	0.039 N
Tetrachloroethene	1.4	---	---	---	---	---	---	---
Toluene	1.5	---	[110 NJ]	---	---	---	---	0.045 N
Trichloroethene	0.7	---	---	---	---	---	---	0.053 J
Xylene (total)	1.2	---	[84 NJ]	---	---	---	---	0.33 N
cis-1,2-Dichloroethene	0.25	---	---	0.002 J	---	---	[0.47 J]	[0.45]
trans-1,2-Dichloroethene	0.3	---	---	---	---	---	0.011 J	0.009 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T04-2 N. Property Trench 11/04/1999 6 ft. mg/Kg	T04-3 N. Property Trench 11/05/1999 3 ft. mg/Kg	T05-1 N. Property Trench 11/11/1999 3.5 ft. mg/Kg	T08-2 N. Property Trench 11/09/1999 9 ft. mg/Kg	T08-3 N. Property Trench 11/09/1999 8 ft. mg/Kg	T10-1 N. Property Trench 11/09/1999 5.5 ft. mg/Kg	T11-1 N. Property Trench 11/10/1999 8 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	[13]	---	---	---
Chloroform		0.3	---	---	---	---	---	---	---
Methylene chloride		0.1	---	0.002 N	0.002 N	---	---	0.001 N	---
Ethylbenzene		5.5	0.71 N	---	---	---	0.021 N	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	0.37 N	---	---	---	0.009 N	---	---
Trichloroethene		0.7	---	0.004	---	---	---	---	---
Xylene (total)		1.2	[4 N]	---	---	---	0.035 NJ	---	---
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	0.003

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T12-2 N. Property Trench 11/10/1999 12 ft. mg/Kg	OBG-TB-24 NE Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-24 NE Property Area 10/18/1999 6 - 8 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 0 - 1 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 12 - 14 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 22 - 24 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 6 - 8 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	0.005 N	0.004 N	---	---	---	---
Methylene chloride		0.1	---	0.009 N	0.003 N	0.002 N	---	0.004 N	0.003 N
Ethylbenzene		5.5	[10 N]	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	[8.8 N]	---	---	---	---	---	---
Trichloroethene		0.7	---	---	---	---	[1.5 J]	---	---
Xylene (total)		1.2	[110 N]	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	[11]	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 12 - 14 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 22 - 24 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 6 - 8 ft. mg/Kg	SS-99-15 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	OBG-TB-22 SE Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-23 SE Property Area 10/18/1999 2 - 4 ft. mg/Kg	SS-99-18 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	---	---	---
Methylene chloride		0.1	---	0.001 NJ	0.002 N	0.002 N	0.003 N	0.006 N	0.003 N
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	---	---	---	---	---
Trichloroethene		0.7	[0.79 J]	---	---	---	---	---	---
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	---	---	0.019	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	0.001	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-19 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	OBG-TB-20 SW Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 0 - 1 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 5 - 6 ft. mg/Kg	OBG-TB-33 SW Property Area 10/20/1999 5 - 6 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 0 - 1 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	---	---	---
Methylene chloride		0.1	0.006 N	0.003 N	0.001 N	0.003 N	---	0.001 N	0.029 NJ
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	---	---	---	---	0.002 N
Trichloroethene		0.7	---	---	---	0.002	0.009	---	0.02 J
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 10 - 12 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 4 - 6 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 0 - 1 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 4 - 6 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 8 - 10 ft. mg/Kg	SS-99-01 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-03 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg
1,1-Dichloroethane		0.2	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Chlorobenzene		1.7	---	---	---	---	---	---	---
Chloroform		0.3	---	---	---	---	---	---	---
Methylene chloride		0.1	---	0.021 N	0.034 N	---	0.015 N	0.011 J	0.002 NJ
Ethylbenzene		5.5	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	0.002 N	0.002 N	---	---	---	---
Trichloroethene		0.7	[2 J]	0.032	0.031	0.37	0.23	---	---
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-8A
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8021 Volatile Organic Compound Data

Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-04 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg
Compound		
1,1-Dichloroethane	0.2	---
1,2-Dichlorobenzene	7.9	---
Benzene	0.06	---
Chlorobenzene	1.7	---
Chloroform	0.3	---
Methylene chloride	0.1	0.001 NJ
Ethylbenzene	5.5	---
Tetrachloroethene	1.4	---
Toluene	1.5	---
Trichloroethene	0.7	---
Xylene (total)	1.2	---
cis-1,2-Dichloroethene	0.25	---
trans-1,2-Dichloroethene	0.3	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	BH-27 Bldg. Oil Sumps/Tanks 04/02/1996 7.5 - 9.0 ft. mg/Kg	BH-28 Bldg. Oil Sumps/Tanks 04/02/1996 7.5 - 9.0 ft. mg/Kg	BH-46 Bldg. Paint Room 04/11/1996 15.0 - 16.0 ft. mg/Kg	BH-47 Bldg. Paint Room 04/11/1996 15.0 - 16.0 ft. mg/Kg	BH-47 Bldg. Paint Room 04/11/1996 7.0 - 9.0 ft. mg/Kg	BH-48 Bldg. Paint Room 04/12/1996 10.0 - 10.5 ft. mg/Kg	OBG-TB-12 Bldg. Paint Room 07/13/1999 11 - 13 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
1,2-Dichloroethene		0.25*	0.093	0.022	0.14 J	[0.56 J]	[1 J]	[0.31]	---
2-Butanone (MEK)		0.3	---	---	---	---	---	---	---
Acetone		0.2	0.022	0.017	0.021 J	---	---	0.014	---
Benzene		0.06	---	---	---	---	---	---	---
Carbon disulfide		2.7	---	---	---	---	---	---	---
Ethylbenzene		5.5	---	---	---	---	---	---	---
Methylene chloride		0.1	0.005 J	0.003 J	---	---	0.011 J	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	0.002 J	---	---	---	---	---	---
Trichloroethene		0.7	0.039	0.003 J	[14]	[6]	[150]	[42]	[26]
Vinyl chloride		0.2	---	0.011 J	---	---	0.044 J	---	---
Xylene (total)		1.2	0.003 J	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	[5.1]
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-12 Bldg. Paint Room 07/13/1999 5 - 7 ft. mg/Kg	OBG-TB-12DL Bldg. Paint Room 07/13/1999 11 - 13 ft. mg/Kg	OBG-TB-13 Bldg. Paint Room 07/14/1999 9 - 11 ft. mg/Kg	OBG-TB-17 Bldg. Paint Room 07/19/1999 4 - 8 ft. mg/Kg	BH-6 COMP Bldg. Plating Area 08/09/1995 1.0 - 2.0 ft. mg/Kg	BH-7 COMP Bldg. Plating Area 08/09/1995 1.0 - 2.0 ft. mg/Kg	BH-9 Bldg. Plating Area 08/09/1995 6.0 - 8.0 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	0.005 J	---	---	---
1,2-Dichloroethene		0.25*	---	---	---	---	0.054	0.039	---
2-Butanone (MEK)		0.3	---	---	---	---	---	---	---
Acetone		0.2	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Carbon disulfide		2.7	---	---	---	---	---	---	---
Ethylbenzene		5.5	---	---	---	---	---	---	---
Methylene chloride		0.1	---	[0.19 J]	---	[0.15 J]	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	---	---	---	---	0.21	---
Trichloroethene		0.7	[7.4]	[26]	[4]	0.064 J	0.28	[0.73]	[73]
Vinyl chloride		0.2	---	---	---	---	---	---	---
Xylene (total)		1.2	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		0.25	0.17 J	[5]	0.062 J	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	0.062 J	---	---	---	---

NOTES:
J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 9 - 11 ft. mg/Kg	BH-1 N. Property Area 08/14/1995 9.0 - 10.0 ft. mg/Kg	BH-2 N. Property Area 08/14/1995 8.0 - 10.0 ft. mg/Kg	BH-3 N. Property Area 08/11/1995 14.0 - 15.5 ft. mg/Kg	SS-99-10 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	T02-1 N. Property Trench 11/03/1999 8 ft. mg/Kg	T03-2 N. Property Trench 11/03/1999 7 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---	---	0.002 J	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
1,2-Dichloroethene		0.25*	---	---	---	---	---	---	---
2-Butanone (MEK)		0.3	---	---	---	---	---	---	0.007 J
Acetone		0.2	---	0.1	0.043 J	---	---	0.032	0.025 J
Benzene		0.06	---	---	0.018 J	---	0.005 J	0.002 J	0.001 J
Carbon disulfide		2.7	---	---	0.007 J	---	0.038 J	0.002 J	0.004 J
Ethylbenzene		5.5	0.025 J	---	0.021 J	---	---	0.0008 NJ	0.002 J
Methylene chloride		0.1	0.001 J	[0.14]	---	---	---	---	---
Tetrachloroethene		1.4	0.001 J	---	---	---	0.012 J	---	---
Toluene		1.5	---	0.27	0.024 J	0.007	---	0.002 NJ	0.002 J
Trichloroethene		0.7	---	---	---	---	[46 J]	0.006 J	---
Vinyl chloride		0.2	---	---	0.12 J	---	---	---	---
Xylene (total)		1.2	0.22 J	---	0.11 J	---	---	0.002 NJ	0.006 J
cis-1,2-Dichloroethene		0.25	---	---	---	---	[0.34]	0.027	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	HA-8 SE Property Area 08/11/1995 5.5 - 7.0 ft. mg/Kg	HA-1 Thinner Tank Area 08/10/1995 6.0 - 7.0 ft. mg/Kg	SS-99-05 Thinner Tank Area 10/26/1999 0 - 1 ft. mg/Kg	T-13 Thinner Tank Area 03/27/1986 1.0 - 3.0 ft. mg/Kg	T-13 Thinner Tank Area 03/27/1986 11.0 - 13.0 ft. mg/Kg	T-13 Thinner Tank Area 03/27/1986 13.0 - 15.0 ft. mg/Kg	T-13 Thinner Tank Area 03/27/1986 3.0 - 5.0 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
1,2-Dichloroethene		0.25*	---	---	---	---	---	---	---
2-Butanone (MEK)		0.3	---	---	---	---	---	---	---
Acetone		0.2	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Carbon disulfide		2.7	---	---	---	---	---	---	---
Ethylbenzene		5.5	---	0.61 J	---	0.06	0.22	0.062	0.047
Methylene chloride		0.1	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	0.002 J	---	---	---	---
Toluene		1.5	0.068	[720]	---	0.015	---	---	0.01
Trichloroethene		0.7	---	---	---	---	---	---	---
Vinyl chloride		0.2	---	---	---	---	---	---	---
Xylene (total)		1.2	---	[1.9 J]	---	0.6	1.14	0.42	0.23
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	T-13 Thinner Tank Area 03/27/1986 5.0 - 7.0 ft. mg/Kg	T-13 Thinner Tank Area 03/27/1986 7.0 - 9.0 ft. mg/Kg	T-13 Thinner Tank Area 03/27/1986 9.0 - 11.0 ft. mg/Kg	T-15 Thinner Tank Area 03/24/1986 11.0 - 13.0 ft. mg/Kg	T-15 Thinner Tank Area 03/24/1986 13.0 - 15.0 ft. mg/Kg	T-15 Thinner Tank Area 03/24/1986 5.0 - 7.0 ft. mg/Kg	T-15 Thinner Tank Area 03/24/1986 7.0 - 9.0 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
1,2-Dichloroethene		0.25*	---	---	---	---	---	---	---
2-Butanone (MEK)		0.3	---	---	---	---	---	---	---
Acetone		0.2	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Carbon disulfide		2.7	---	---	---	---	---	---	---
Ethylbenzene		5.5	[8]	[18.4]	4	[9.6]	[6.4]	[12.4]	[30.2]
Methylene chloride		0.1	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	0.32	0.78	0.14	0.67	0.21	0.66	1.03
Trichloroethene		0.7	---	---	---	---	---	---	---
Vinyl chloride		0.2	---	---	---	---	---	---	---
Xylene (total)		1.2	[60]	[127.2]	[24]	[55.2]	[37.2]	[79]	[163]
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	T-15 Thinner Tank Area 03/24/1986 9.0 - 11.0 ft. mg/Kg	T-16 Thinner Tank Area 03/24/1986 1.0 - 3.0 ft. mg/Kg	T-16 Thinner Tank Area 03/24/1986 11.0 - 13.0 ft. mg/Kg	T-16 Thinner Tank Area 03/24/1986 13.0 - 15.0 ft. mg/Kg	T-16 Thinner Tank Area 03/24/1986 3.0 - 5.0 ft. mg/Kg	T-16 Thinner Tank Area 03/24/1986 5.0 - 7.0 ft. mg/Kg	T-16 Thinner Tank Area 03/24/1986 7.0 - 9.0 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
1,2-Dichloroethene		0.25*	---	---	---	---	---	---	---
2-Butanone (MEK)		0.3	---	---	---	---	---	---	---
Acetone		0.2	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Carbon disulfide		2.7	---	---	---	---	---	---	---
Ethylbenzene		5.5	[27]	0.01	[6.9]	3.2	0.01	2.8	[27]
Methylene chloride		0.1	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	0.98	0.01	0.22	0.1	0.01	0.01	0.18
Trichloroethene		0.7	---	---	---	---	---	---	---
Vinyl chloride		0.2	---	---	---	---	---	---	---
Xylene (total)		1.2	[149]	0.01	[48]	[21.6]	0.23	[6.2]	[50>]
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	T-16 Thinner Tank Area 03/24/1986 9.0 - 11.0 ft. mg/Kg	T-18A Thinner Tank Area 03/25/1986 2.0 - 3.0 ft. mg/Kg	T-18B Thinner Tank Area 03/25/1986 1.0 - 3.0 ft. mg/Kg	T-18B Thinner Tank Area 03/25/1986 7.0 - 9.0 ft. mg/Kg	T-18B Thinner Tank Area 03/26/1986 11.0 - 13.0 ft. mg/Kg	T-18B Thinner Tank Area 03/26/1986 13.0 - 15.0 ft. mg/Kg	T-18B Thinner Tank Area 03/26/1986 9.0 - 11.0 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
1,2-Dichloroethene		0.25*	---	---	---	---	---	---	---
2-Butanone (MEK)		0.3	---	---	---	---	---	---	---
Acetone		0.2	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Carbon disulfide		2.7	---	---	---	---	---	---	---
Ethylbenzene		5.5	[8.4]	---	---	0.16	[37.6]	0.59	[48]
Methylene chloride		0.1	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	0.14	0.14	0.08	0.06	[2.5]	0.05	[3.5]
Trichloroethene		0.7	---	---	---	---	---	---	---
Vinyl chloride		0.2	---	---	---	---	---	---	---
Xylene (total)		1.2	[46]	---	---	[3.4]	[235]	[3.54]	[300]
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T-21 Thinner Tank Area 03/25/1986 1.0 - 3.0 ft. mg/Kg	T-21 Thinner Tank Area 03/25/1986 10.0 - 12.0 ft. mg/Kg	T-21 Thinner Tank Area 03/25/1986 12.0 - 14.0 ft. mg/Kg	T-21 Thinner Tank Area 03/25/1986 14.0 - 16.0 ft. mg/Kg	T-21 Thinner Tank Area 03/25/1986 4.0 - 6.0 ft. mg/Kg	T-21 Thinner Tank Area 03/25/1986 6.0 - 8.0 ft. mg/Kg	T-23 Thinner Tank Area 03/27/1986 11.0 - 13.0 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
1,2-Dichloroethene		0.25*	---	---	---	---	---	---	---
2-Butanone (MEK)		0.3	---	---	---	---	---	---	---
Acetone		0.2	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Carbon disulfide		2.7	---	---	---	---	---	---	---
Ethylbenzene		5.5	---	[55]	[8.5]	[8]	---	3.2	[25.6]
Methylene chloride		0.1	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	0.16	[2.3]	0.25	0.37	---	0.22	[1.92]
Trichloroethene		0.7	---	---	---	---	---	---	---
Vinyl chloride		0.2	---	---	---	---	---	---	---
Xylene (total)		1.2	---	[330]	[43.2]	[51.6]	0.02	[19.2]	[150]
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T-23 Thinner Tank Area 03/27/1986 13.0 - 15.0 ft. mg/Kg	T-23 Thinner Tank Area 03/27/1986 3.0 - 5.0 ft. mg/Kg	T-23 Thinner Tank Area 03/27/1986 9.0 - 11.0 ft. mg/Kg	T-24 Thinner Tank Area 03/31/1986 12.0 - 15.0 ft. mg/Kg	T-24 Thinner Tank Area 03/31/1986 9.0 - 11.0 ft. mg/Kg	T-26 Thinner Tank Area 03/27/1986 7.0 - 9.0 ft. mg/Kg	T-29 Thinner Tank Area 03/28/1986 11.0 - 13.0 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
1,2-Dichloroethene		0.25*	---	---	---	---	---	---	---
2-Butanone (MEK)		0.3	---	---	---	---	---	---	---
Acetone		0.2	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Carbon disulfide		2.7	---	---	---	---	---	---	---
Ethylbenzene		5.5	0.39	---	[61]	---	0.076	---	[42.4]
Methylene chloride		0.1	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	---	0.01	[2.8]	[5.9]	[5.8]	0.03	[2.44]
Trichloroethene		0.7	---	---	---	---	---	---	---
Vinyl chloride		0.2	---	---	---	---	---	---	---
Xylene (total)		1.2	[1.23]	---	[317]	---	0.46	---	[240]
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T-29 Thinner Tank Area 03/28/1986 13.0 - 15.0 ft. mg/Kg	T-29 Thinner Tank Area 03/28/1986 9.0 - 11.0 ft. mg/Kg	T-30 Thinner Tank Area 03/27/1986 1.0 - 3.0 ft. mg/Kg	T-30 Thinner Tank Area 03/27/1986 11.0 - 13.0 ft. mg/Kg	T-30 Thinner Tank Area 03/27/1986 13.0 - 15.0 ft. mg/Kg	T-30 Thinner Tank Area 03/27/1986 3.0 - 5.0 ft. mg/Kg	T-30 Thinner Tank Area 03/27/1986 5.0 - 7.0 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
1,2-Dichloroethene		0.25*	---	---	---	---	---	---	---
2-Butanone (MEK)		0.3	---	---	---	---	---	---	---
Acetone		0.2	---	---	---	---	---	---	---
Benzene		0.06	---	---	---	---	---	---	---
Carbon disulfide		2.7	---	---	---	---	---	---	---
Ethylbenzene		5.5	[21.6]	0.22	0.01	[7.8]	[35.6]	0.01	0.01
Methylene chloride		0.1	---	---	---	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---	---	---	---
Toluene		1.5	1.25	0.02	0.01	0.53	1.25	0.01	0.01
Trichloroethene		0.7	---	---	---	---	---	---	---
Vinyl chloride		0.2	---	---	---	---	---	---	---
Xylene (total)		1.2	[118]	0.87	0.01	[43.8]	[210]	0.01	0.01
cis-1,2-Dichloroethene		0.25	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-8B
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	T-30 Thinner Tank Area 03/27/1986 7.0 - 9.0 ft. mg/Kg	T-30 Thinner Tank Area 03/27/1986 9.0 - 11.0 ft. mg/Kg	T-33B Thinner Tank Area 03/28/1986 13.0 - 15.0 ft. mg/Kg	T-34 Thinner Tank Area 03/28/1986 9.0 - 11.0 ft. mg/Kg
1,1-Dichloroethene		0.4	---	---	---	---
1,2-Dichlorobenzene		7.9	---	---	---	---
1,2-Dichloroethene		0.25*	---	---	---	---
2-Butanone (MEK)		0.3	---	---	---	---
Acetone		0.2	---	---	---	---
Benzene		0.06	---	---	---	---
Carbon disulfide		2.7	---	---	---	---
Ethylbenzene		5.5	0.01	0.26	0.034	---
Methylene chloride		0.1	---	---	---	---
Tetrachloroethene		1.4	---	---	---	---
Toluene		1.5	0.01	0.032	---	---
Trichloroethene		0.7	---	---	---	---
Vinyl chloride		0.2	---	---	---	---
Xylene (total)		1.2	0.01	0.93	0.19	0.033
cis-1,2-Dichloroethene		0.25	---	---	---	---
trans-1,2-Dichloroethene		0.3	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.
* - Denotes criteria for cis-1,2-dichloroethene, as there is no total 1,2-Dichloroethene criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units: TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-15 Bldg. Sump #2 07/16/1999 7 - 9 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 4 - 6 ft. mg/Kg	OBG-TB-14 Bldg. Sump #3 07/16/1999 6 - 8 ft. mg/Kg	OBG-TB-19 Bldg. Sump #7 07/20/1999 1 - 3 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 1 - 3 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 3 - 5 ft. mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 5 - 7 ft. mg/Kg
1,2-Dichlorobenzene	7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol	NC	---	---	---	---	---	---	---
2-Methylnaphthalene	36.4	---	---	---	---	---	---	---
2-Methylphenol	0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether	NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol	0.24	---	---	---	---	---	---	---
4-Methylphenol	0.9	---	---	---	---	---	---	---
Acenaphthene	50	---	---	---	---	---	---	---
Acenaphthylene	41	---	---	---	---	---	---	---
Anthracene	50	---	---	---	---	---	0.043 J	---
Benzo(a)anthracene	0.224	0.041 J	0.036 J	---	---	0.043 J	0.084 J	---
Benzo[a]pyrene	0.061	0.044 J	0.035 J	---	---	0.037 J	[0.078 J]	---
Benzo(b)fluoranthene	0.224	0.079 J	0.05 J	---	---	0.047 J	0.11 J	---
Benzo(ghi)perylene	50	---	---	---	---	---	0.039 J	---
Benzo(k)fluoranthene	0.224	---	---	---	---	---	0.039 J	---
Butyl benzyl phthalate	50	---	---	---	0.048 J	---	---	---
Carbazole	NC	---	---	---	---	---	---	---
Chrysene	0.4	0.057 J	0.046 J	---	---	0.048 J	0.1 J	---
Di-n-butyl phthalate	8.1	---	---	---	---	0.082 J	0.23 J	0.047 J
Di-n-octyl phthalate	50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	0.014	---	---	---	---	---	---	---
Dibenzofuran	6.2	---	---	---	---	---	---	---
Dimethyl phthalate	2	---	---	---	---	---	---	---
Fluoranthene	50	0.082 J	0.056 J	---	---	0.093 J	0.19 J	0.038 J
Fluorene	50	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup	OBG-TB-15	OBG-TB-14	OBG-TB-14	OBG-TB-19	OBG-TB-01	OBG-TB-01	OBG-TB-01
Area		Bldg. Sump #2	Bldg. Sump #3	Bldg. Sump #3	Bldg. Sump #7	Bldg. Sump #8	Bldg. Sump #8	Bldg. Sump #8
Sample Date		07/16/1999	07/16/1999	07/16/1999	07/20/1999	07/06/1999	07/06/1999	07/06/1999
Sample Depth		7 - 9 ft.	4 - 6 ft.	6 - 8 ft.	1 - 3 ft.	1 - 3 ft.	3 - 5 ft.	5 - 7 ft.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound								
Hexachlorobenzene	0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	3.2	---	---	---	---	---	---	---
Naphthalene	13	---	---	---	---	---	---	---
Phenanthrene	50	0.037 J	0.059 J	---	---	0.068 J	0.16 J	---
Phenol	0.03	---	---	---	---	---	---	---
Pyrene	50	0.079 J	0.12 J	0.067 J	---	0.088 J	0.25 J	0.04 J
Bis(2-ethylhexyl)phthalate (BEHP)	50	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 7 - 9 ft. mg/Kg	HA-12 IWT Area 08/11/1995 10.0 - 10.5 ft. mg/Kg	SS-99-22 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-23 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-24 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-25 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-26 IWT Area 10/27/1999 0 - 1 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	---	---	---	---	---	---	---
2-Methylnaphthalene		36.4	---	---	0.21 J	---	0.067 J	0.076 J	2.8 J
2-Methylphenol		0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether		NC	---	0.49 J	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	---	---	---	---	---	---
Acenaphthene		50	---	---	0.33 J	---	0.57	---	3.8 J
Acenaphthylene		41	---	---	---	---	---	---	---
Anthracene		50	---	---	0.44	0.088 J	2.2	---	2.4 J
Benzo(a)anthracene		0.224	---	---	[0.91]	[0.33 J]	[4.7 J]	---	[12 J]
Benzo[a]pyrene		0.061	---	---	[1.1]	[0.35 J]	[3.3 J]	---	---
Benzo(b)fluoranthene		0.224	---	---	[1.5]	[0.45 J]	[4.8 J]	---	---
Benzo(ghi)perylene		50	---	---	0.33 J	0.18 J	0.81 J	---	---
Benzo(k)fluoranthene		0.224	---	---	[0.47 J]	0.15 J	[1.8 J]	---	---
Butyl benzyl phthalate		50	---	---	---	---	---	---	---
Carbazole		NC	---	---	0.21 J	---	0.64	---	3.6 J
Chrysene		0.4	---	---	[1 J]	[0.41 J]	[5.3]	---	[18 J]
Di-n-butyl phthalate		8.1	---	0.59	---	---	---	---	---
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	[0.14 J]	---	[0.36 J]	---	[3.9 J]
Dibenzofuran		6.2	---	---	0.11 J	---	0.34 J	---	2.5 J
Dimethyl phthalate		2	---	---	0.086 J	---	---	---	---
Fluoranthene		50	---	---	1.6 J	0.28 J	4.4	---	21 J
Fluorene		50	---	---	0.18 J	---	0.9	---	3.1 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-01 Bldg. Sump #8 07/06/1999 7 - 9 ft. mg/Kg	HA-12 IWT Area 08/11/1995 10.0 - 10.5 ft. mg/Kg	SS-99-22 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-23 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-24 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-25 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-26 IWT Area 10/27/1999 0 - 1 ft. mg/Kg
Compound								
Hexachlorobenzene	0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	3.2	---	---	0.32 J	0.17 J	0.9 J	---	[12 J]
Naphthalene	13	---	---	0.24 J	---	---	---	0.82 J
Phenanthrene	50	---	---	1.6	0.27 J	7.3	---	24
Phenol	0.03	[0.048 J]	---	---	---	---	---	[0.85 J]
Pyrene	50	---	---	3.1 J	0.78 J	9.7	---	29 J
Bis(2-ethylhexyl)phthalate (BEHP)	50	---	---	0.077 J	0.062 J	0.057 J	0.42 J	2.8 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	TAGM Recommended Soil Cleanup	SS-99-27	SS-99-28	SS-99-29	SS-99-30	SS-99-31	OBG-TB-31	OBG-TB-31
Sample ID / Area / Sample Date / Sample Depth / Units		IWT Area 10/27/1999 0 - 1 ft. mg/Kg	IWT Area 10/27/1999 0 - 1 ft. mg/Kg	IWT Area 10/27/1999 0 - 1 ft. mg/Kg	IWT Area 10/27/1999 0 - 1 ft. mg/Kg	IWT Area 10/27/1999 0 - 1 ft. mg/Kg	IWT Fuel Tank Area 10/19/1999 2 - 4 ft. mg/Kg	IWT Fuel Tank Area 10/19/1999 4 - 6 ft. mg/Kg
	mg/Kg							
1,2-Dichlorobenzene	7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol	NC	---	---	---	---	---	---	---
2-Methylnaphthalene	36.4	---	0.059 J	---	---	---	---	---
2-Methylphenol	0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether	NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol	0.24	---	---	---	---	---	---	---
4-Methylphenol	0.9	---	---	---	---	---	---	---
Acenaphthene	50	---	0.046 J	---	1 J	---	---	---
Acenaphthylene	41	---	---	---	---	---	---	---
Anthracene	50	---	0.052 J	---	2.5 J	---	---	---
Benzo(a)anthracene	0.224	0.089 J	0.17 J	0.092 J	[7.6]	[0.81 J]	---	---
Benzo[a]pyrene	0.061	[0.077 J]	[0.19 J]	---	[8.4]	---	---	---
Benzo(b)fluoranthene	0.224	0.15 J	[0.31 J]	---	[12 J]	---	---	---
Benzo(ghi)perylene	50	---	0.11 J	---	3.2 J	---	---	---
Benzo(k)fluoranthene	0.224	0.042 J	0.091 J	---	[3.8 J]	---	---	---
Butyl benzyl phthalate	50	---	---	0.54 J	36	22 J	---	---
Carbazole	NC	---	---	---	1.3 J	---	---	---
Chrysene	0.4	0.13 J	0.26 J	0.15 J	[8.5]	[0.9 J]	---	---
Di-n-butyl phthalate	8.1	---	---	---	---	---	0.14 J	---
Di-n-octyl phthalate	50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	0.014	---	---	---	---	---	---	---
Dibenzofuran	6.2	---	0.039 J	---	---	---	---	---
Dimethyl phthalate	2	---	---	---	---	---	---	---
Fluoranthene	50	0.1 J	0.21 J	0.092 J	13 J	1.1 J	---	---
Fluorene	50	---	---	---	.1 J	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-27 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-28 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-29 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-30 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	SS-99-31 IWT Area 10/27/1999 0 - 1 ft. mg/Kg	OBG-TB-31 IWT Fuel Tank Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-31 IWT Fuel Tank Area 10/19/1999 4 - 6 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	---	0.1 J	---	[3.5 J]	---	---	---
Naphthalene		13	---	---	---	---	---	---	---
Phenanthrene		50	0.075 J	0.3 J	0.084 J	9	0.96 J	---	---
Phenol		0.03	---	---	[0.041 J]	---	---	---	---
Pyrene		50	0.26 J	0.46 J	0.23 J	14	2.2 J	---	---
Bis(2-ethylhexyl)phthalate (BEHP)		50	0.068 J	0.35 J	0.51 J	---	0.85 J	0.11 J	0.045 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-32 IWT Fuel Tank Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-32 IWT Fuel Tank Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-43 IWT Fuel Tank Area 10/25/1999 2 - 4 ft. mg/Kg	OBG-TB-43 IWT Fuel Tank Area 10/25/1999 4 - 6 ft. mg/Kg	OBG-TB-44 IWT Fuel Tank Area 10/25/1999 2 - 4 ft. mg/Kg	OBG-TB-44 IWT Fuel Tank Area 10/25/1999 6 - 8 ft. mg/Kg	OBG-TB-30 IWT TCE Storage Area 10/19/1999 4 - 6 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	---	---	---	---	---	---	---
2-Methylnaphthalene		36.4	---	---	---	---	---	---	---
2-Methylphenol		0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	---	---	---	---	---	---
Acenaphthene		50	---	---	---	---	---	---	---
Acenaphthylene		41	---	---	---	---	---	---	---
Anthracene		50	---	---	---	---	---	---	---
Benzo(a)anthracene		0.224	---	---	---	---	---	---	---
Benzo[a]pyrene		0.061	---	---	---	---	---	---	---
Benzo(b)fluoranthene		0.224	---	---	---	---	---	---	---
Benzo(ghi)perylene		50	---	---	---	---	---	---	---
Benzo(k)fluoranthene		0.224	---	---	---	---	---	---	---
Butyl benzyl phthalate		50	---	---	---	---	---	---	---
Carbazole		NC	---	---	---	---	---	---	---
Chrysene		0.4	---	---	---	---	---	---	---
Di-n-butyl phthalate		8.1	---	---	---	---	---	---	---
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---	---	---	---	---
Dibenzofuran		6.2	---	---	---	---	---	---	---
Dimethyl phthalate		2	---	---	---	---	---	---	---
Fluoranthene		50	---	---	---	---	---	---	---
Fluorene		50	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-32 IWT Fuel Tank Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-32 IWT Fuel Tank Area 10/19/1999 4 - 6 ft. mg/Kg	OBG-TB-43 IWT Fuel Tank Area 10/25/1999 2 - 4 ft. mg/Kg	OBG-TB-43 IWT Fuel Tank Area 10/25/1999 4 - 6 ft. mg/Kg	OBG-TB-44 IWT Fuel Tank Area 10/25/1999 2 - 4 ft. mg/Kg	OBG-TB-44 IWT Fuel Tank Area 10/25/1999 6 - 8 ft. mg/Kg	OBG-TB-30 IWT TCE Storage Area 10/19/1999 4 - 6 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	---	---	---	---	---	---	---
Naphthalene		13	---	---	---	---	---	---	---
Phenanthrene		50	---	---	---	---	---	---	---
Phenol		0.03	---	---	---	---	---	---	---
Pyrene		50	---	---	---	---	---	---	---
Bis(2-ethylhexyl)phthalate (BEHP)		50	0.49	0.077 J	4.8	0.084 J	0.34 J	0.13 J	0.18 J

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NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units: TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-30 IWT TCE Storage Area 10/19/1999 6 - 8 ft. mg/Kg	OBG-TB-38 IWT TCE Storage Area 10/21/1999 12 - 14 ft. mg/Kg	OBG-TB-38 IWT TCE Storage Area 10/21/1999 4 - 6 ft. mg/Kg	BH-3 N. Property Area 08/11/1995 14.0 - 15.5 ft. mg/Kg	OBG-TB-29 N. Property Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-29 N. Property Area 10/19/1999 6 - 8 ft. mg/Kg	SS-99-06 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg
1,2-Dichlorobenzene	7.9	---	---	---	---	---	---	0.059 J
2,4-Dimethylphenol	NC	---	---	---	---	---	---	---
2-Methylnaphthalene	36.4	---	---	---	---	---	---	0.09 J
2-Methylphenol	0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether	NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol	0.24	---	---	---	---	---	---	---
4-Methylphenol	0.9	---	---	---	---	---	---	---
Acenaphthene	50	---	---	---	---	---	---	---
Acenaphthylene	41	---	---	---	---	---	---	---
Anthracene	50	---	---	---	---	---	---	---
Benzo(a)anthracene	0.224	---	---	---	---	---	---	---
Benzo[a]pyrene	0.061	---	---	---	---	---	---	---
Benzo(b)fluoranthene	0.224	---	---	---	---	---	---	---
Benzo(ghi)perylene	50	---	---	---	---	---	---	---
Benzo(k)fluoranthene	0.224	---	---	---	---	---	---	---
Butyl benzyl phthalate	50	---	---	---	---	---	---	---
Carbazole	NC	---	---	---	---	---	---	---
Chrysene	0.4	---	---	---	---	---	---	---
Di-n-butyl phthalate	8.1	---	---	---	---	---	---	---
Di-n-octyl phthalate	50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	0.014	---	---	---	---	---	---	---
Dibenzofuran	6.2	---	---	---	---	---	---	---
Dimethyl phthalate	2	---	---	---	---	---	---	---
Fluoranthene	50	---	---	---	---	---	---	---
Fluorene	50	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-30 IWT TCE Storage Area 10/19/1999 6 - 8 ft. mg/Kg	OBG-TB-38 IWT TCE Storage Area 10/21/1999 12 - 14 ft. mg/Kg	OBG-TB-38 IWT TCE Storage Area 10/21/1999 4 - 6 ft. mg/Kg	BH-3 N. Property Area 08/11/1995 14.0 - 15.5 ft. mg/Kg	OBG-TB-29 N. Property Area 10/19/1999 2 - 4 ft. mg/Kg	OBG-TB-29 N. Property Area 10/19/1999 6 - 8 ft. mg/Kg	SS-99-06 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	---	---	---	---	---	---	---
Naphthalene		13	---	---	---	---	---	---	0.04 J
Phenanthrene		50	---	---	---	---	---	---	---
Phenol		0.03	---	---	---	---	---	---	---
Pyrene		50	---	---	---	---	---	---	---
Bis(2-ethylhexyl)phthalate (BEHP)		50	0.077 J	0.48	0.26 J	0.48	1.9	1.2	0.26 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-07 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-08 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-09 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-10 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-11 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-12 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-13 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	---	---	---	---	---	---	---
2-Methylnaphthalene		36.4	---	---	---	0.23 J	0.21 J	---	---
2-Methylphenol		0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	---	---	---	---	---	---
Acenaphthene		50	---	---	---	---	---	---	---
Acenaphthylene		41	---	---	---	---	---	---	---
Anthracene		50	---	---	---	---	---	---	---
Benzo(a)anthracene		0.224	---	---	---	0.15 J	0.18 J	0.12 J	[0.27 J]
Benzo[a]pyrene		0.061	---	---	---	[0.17 J]	[0.17 J]	[0.16 J]	[0.37 J]
Benzo(b)fluoranthene		0.224	0.043 J	0.067 J	---	[0.27 J]	[0.26 J]	[0.25 J]	[0.63 J]
Benzo(ghi)perylene		50	---	---	---	---	---	0.05 J	0.13 J
Benzo(k)fluoranthene		0.224	---	---	---	0.076 J	0.082 J	0.061 J	0.2 J
Butyl benzyl phthalate		50	---	---	---	---	---	---	---
Carbazole		NC	---	---	---	---	---	---	---
Chrysene		0.4	0.042 J	0.058 J	---	0.21 J	0.21 J	0.16 J	[0.43 J]
Di-n-butyl phthalate		8.1	---	---	---	---	---	---	---
Di-n-octyl phthalate		50	---	---	[56]	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---	---	---	---	---
Dibenzofuran		6.2	---	---	---	0.055 J	0.048 J	---	---
Dimethyl phthalate		2	---	---	---	---	---	---	---
Fluoranthene		50	0.048 J	0.056 J	---	0.2 J	0.19 J	0.11 J	0.46
Fluorene		50	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-07 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-08 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-09 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-10 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-11 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-12 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-13 N. Property Area 10/26/1999 0 - 1 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	---	---	---	---	---	0.067 J	0.14 J
Naphthalene		13	---	---	---	0.16 J	0.15 J	---	---
Phenanthrene		50	---	---	---	0.25 J	0.17 J	0.085 J	0.27 J
Phenol		0.03	---	---	---	---	---	---	---
Pyrene		50	0.068 J	0.11 J	---	0.57 J	0.4 J	0.3 J	0.93 J
Bis(2-ethylhexyl)phthalate (BEHP)		50	0.067 J	0.071 J	---	0.09 J	0.069 J	0.075 J	0.042 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T01-1 N. Property Trench 11/01/1999 8 ft. mg/Kg	T01-2 N. Property Trench 11/01/1999 8 ft. mg/Kg	T01-3 N. Property Trench 11/02/1999 8.5 ft. mg/Kg	T01-4 N. Property Trench 11/02/1999 9 ft. mg/Kg	T02-1 N. Property Trench 11/03/1999 8 ft. mg/Kg	T02-2 N. Property Trench 11/03/1999 5.5 ft. mg/Kg	T02-3 N. Property Trench 11/03/1999 9 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	3.2	7	---	---	0.24 J	0.22 J	---
2-Methylnaphthalene		36.4	0.11 J	0.34 J	0.079 J	---	1.9	1.6	6.1 J
2-Methylphenol		0.1	---	[0.44 J]	---	---	[0.15 J]	[0.14 J]	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	3.1 J
4-Chloro-3-methylphenol		0.24	---	[0.28 J]	---	---	---	---	---
4-Methylphenol		0.9	0.54	---	0.043 J	---	0.18 J	0.22 J	---
Acenaphthene		50	---	---	0.086 J	---	0.058 J	0.086 J	---
Acenaphthylene		41	---	---	---	---	---	---	---
Anthracene		50	---	---	---	---	---	0.092 J	---
Benzo(a)anthracene		0.224	---	---	---	---	---	0.1 J	---
Benzo[a]pyrene		0.061	---	---	---	---	---	---	---
Benzo(b)fluoranthene		0.224	---	---	---	---	---	0.089 J	---
Benzo(ghi)perylene		50	---	---	---	---	---	---	---
Benzo(k)fluoranthene		0.224	---	---	---	---	---	---	---
Butyl benzyl phthalate		50	---	---	---	---	---	---	---
Carbazole		NC	---	---	---	---	---	0.1 J	---
Chrysene		0.4	---	---	---	---	---	0.12 J	---
Di-n-butyl phthalate		8.1	---	---	---	---	---	---	---
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---	---	---	---	---
Dibenzofuran		6.2	---	---	---	---	0.28 J	0.36 J	---
Dimethyl phthalate		2	---	---	---	---	---	---	---
Fluoranthene		50	---	---	---	---	---	0.14 J	---
Fluorene		50	---	---	0.081 J	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	T01-1 N. Property Trench 11/01/1999 8 ft. mg/Kg	T01-2 N. Property Trench 11/01/1999 8 ft. mg/Kg	T01-3 N. Property Trench 11/02/1999 8.5 ft. mg/Kg	T01-4 N. Property Trench 11/02/1999 9 ft. mg/Kg	T02-1 N. Property Trench 11/03/1999 8 ft. mg/Kg	T02-2 N. Property Trench 11/03/1999 5.5 ft. mg/Kg	T02-3 N. Property Trench 11/03/1999 9 ft. mg/Kg
Compound								
Hexachlorobenzene	0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	3.2	---	---	---	---	---	---	---
Naphthalene	13	0.1 J	2.3 J	0.052 NJ	---	1.6	1.4	2.1 J
Phenanthrene	50	---	0.34 J	---	---	0.34 J	0.68	---
Phenol	0.03	---	---	---	---	[0.072 J]	[0.099 J]	---
Pyrene	50	0.22 J	---	0.15 J	0.048 J	0.14 J	0.45 J	---
Bis(2-ethylhexyl)phthalate (BEHP)	50	---	8.8 J	0.93 J	0.35 J	0.058 J	1.6 J	0.46 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T02-4 N. Property Trench 11/04/1999 5 ft. mg/Kg	T03-1 N. Property Trench 11/03/1999 6 ft. mg/Kg	T03-2 N. Property Trench 11/03/1999 7 ft. mg/Kg	T03-3 N. Property Trench 11/05/1999 5.5 ft. mg/Kg	T03-4 N. Property Trench 11/05/1999 6 ft. mg/Kg	T03-5 N. Property Trench 11/05/1999 4 ft. mg/Kg	T03-6 N. Property Trench 11/09/1999 4 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	0.81 J	---
2,4-Dimethylphenol		NC	---	0.25 NJ	0.078 J	0.27 J	---	15	---
2-Methylnaphthalene		36.4	---	1.7	0.082 J	0.17 J	0.18 J	11	---
2-Methylphenol		0.1	---	[0.11 J]	---	0.1 J	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	0.38 J	0.54 J	[3.9]	[2.1]	[3.4 J]	---
Acenaphthene		50	---	---	---	---	---	---	---
Acenaphthylene		41	---	---	---	---	---	---	---
Anthracene		50	---	---	---	---	---	---	---
Benzo(a)anthracene		0.224	---	0.13 J	---	---	---	---	---
Benzo[a]pyrene		0.061	---	---	---	---	---	---	---
Benzo(b)fluoranthene		0.224	0.041 J	0.12 J	---	---	---	---	---
Benzo(ghi)perylene		50	---	---	---	---	---	---	---
Benzo(k)fluoranthene		0.224	---	---	---	---	---	---	---
Butyl benzyl phthalate		50	0.14 J	---	---	---	---	---	---
Carbazole		NC	---	---	---	---	---	---	---
Chrysene		0.4	---	0.25 J	---	---	---	---	---
Di-n-butyl phthalate		8.1	---	---	---	---	---	---	---
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---	---	---	---	---
Dibenzofuran		6.2	---	0.34 J	---	---	---	---	---
Dimethyl phthalate		2	---	---	---	---	---	---	---
Fluoranthene		50	0.042 J	0.14 J	---	---	---	---	0.043 J
Fluorene		50	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Sample ID Area Sample Date Sample Depth Units Compound	TAGM Recommended Soil Cleanup mg/Kg	T02-4 N. Property Trench 11/04/1999 5 ft. mg/Kg	T03-1 N. Property Trench 11/03/1999 6 ft. mg/Kg	T03-2 N. Property Trench 11/03/1999 7 ft. mg/Kg	T03-3 N. Property Trench 11/05/1999 5.5 ft. mg/Kg	T03-4 N. Property Trench 11/05/1999 6 ft. mg/Kg	T03-5 N. Property Trench 11/05/1999 4 ft. mg/Kg	T03-6 N. Property Trench 11/09/1999 4 ft. mg/Kg
Hexachlorobenzene	0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	3.2	---	---	---	---	---	---	---
Naphthalene	13	---	1.4	0.079 J	0.2 J	0.19 J	8	---
Phenanthrene	50	---	1.1	0.11 J	0.31 J	0.35 J	---	---
Phenol	0.03	---	[0.067 J]	[0.068 J]	[0.23 J]	[0.13 J]	---	---
Pyrene	50	0.073 J	0.51 J	---	---	---	---	---
Bis(2-ethylhexyl)phthalate (BEHP)	50	---	0.34 J	---	0.58 J	0.53 J	10	0.07 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T04-1 N. Property Trench 11/04/1999 2.5 ft. mg/Kg	T04-2 N. Property Trench 11/04/1999 6 ft. mg/Kg	T04-3 N. Property Trench 11/05/1999 3 ft. mg/Kg	T09-1 N. Property Trench 11/09/1999 10 ft. mg/Kg	OBG-TB-24 NE Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-24 NE Property Area 10/18/1999 6 - 8 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 0 - 1 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	---	0.56 J	0.18 J	---	---	---	---
2-Methylnaphthalene		36.4	7.3	0.88 J	0.51	---	---	0.14 J	0.061 J
2-Methylphenol		0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	[1.6 J]	0.25 J	---	---	---	---
Acenaphthene		50	---	---	---	---	---	---	---
Acenaphthylene		41	---	---	---	---	---	0.052 J	---
Anthracene		50	---	---	---	---	---	0.062 J	---
Benzo(a)anthracene		0.224	---	---	0.045 J	0.1 J	0.057 J	---	0.19 J
Benzo[a]pyrene		0.061	---	---	---	---	0.059 J	[0.64 J]	[0.22 J]
Benzo(b)fluoranthene		0.224	---	---	---	---	0.098 J	[1 J]	[0.34 J]
Benzo(ghi)perylene		50	---	---	---	---	---	0.27 J	0.11 J
Benzo(k)fluoranthene		0.224	---	---	---	---	---	[0.37 J]	0.13 J
Butyl benzyl phthalate		50	---	---	---	---	---	---	0.046 J
Carbazole		NC	---	---	---	---	---	---	---
Chrysene		0.4	---	---	0.072 J	0.15 J	0.071 J	[0.74 J]	0.27 J
Di-n-butyl phthalate		8.1	---	---	---	---	---	---	---
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---	---	---	---	---
Dibenzofuran		6.2	---	---	0.12 J	---	---	---	---
Dimethyl phthalate		2	---	---	---	---	---	---	---
Fluoranthene		50	---	---	---	0.097 J	0.09 J	0.64	0.35 J
Fluorene		50	---	---	---	---	---	0.052 J	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	T04-1 N. Property Trench 11/04/1999 2.5 ft. mg/Kg	T04-2 N. Property Trench 11/04/1999 6 ft. mg/Kg	T04-3 N. Property Trench 11/05/1999 3 ft. mg/Kg	T09-1 N. Property Trench 11/09/1999 10 ft. mg/Kg	OBG-TB-24 NE Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-24 NE Property Area 10/18/1999 6 - 8 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 0 - 1 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	---	---	---	---	---	0.28 J	0.098 J
Naphthalene		13	0.82 J	2.2 J	0.39 J	---	---	0.092 J	0.044 J
Phenanthrene		50	---	0.5 J	0.28 J	0.12 J	---	0.54	0.2 J
Phenol		0.03	---	---	---	---	---	---	---
Pyrene		50	---	---	0.17 J	0.51 J	0.084 J	1.8 J	0.54 J
Bis(2-ethylhexyl)phthalate (BEHP)		50	16	21	0.21 J	1.8 J	0.052 J	0.27 J	0.33 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 12 - 14 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 22 - 24 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 6 - 8 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 12 - 14 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 22 - 24 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 6 - 8 ft. mg/Kg	SS-99-14 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	---	---	---	---	---	---	---
2-Methylnaphthalene		36.4	---	---	---	---	---	---	0.051 J
2-Methylphenol		0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	---	---	---	---	---	---
Acenaphthene		50	---	---	---	---	---	---	---
Acenaphthylene		41	---	---	---	---	---	---	---
Anthracene		50	---	---	---	---	---	---	---
Benzo(a)anthracene		0.224	---	---	---	---	---	---	[0.28 J]
Benzo[a]pyrene		0.061	---	---	---	---	---	---	[0.39 J]
Benzo(b)fluoranthene		0.224	---	---	---	---	---	---	[0.56 J]
Benzo(ghi)perylene		50	---	---	---	---	---	---	0.37 J
Benzo(k)fluoranthene		0.224	---	---	---	---	---	---	0.16 J
Butyl benzyl phthalate		50	---	---	---	---	---	---	---
Carbazole		NC	---	---	---	---	---	---	---
Chrysene		0.4	---	---	---	---	---	---	[0.47 J]
Di-n-butyl phthalate		8.1	---	---	---	---	---	---	---
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---	---	---	---	---
Dibenzofuran		6.2	---	---	---	---	---	---	---
Dimethyl phthalate		2	---	---	---	---	---	---	---
Fluoranthene		50	---	---	---	---	---	---	0.34 J
Fluorene		50	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 12 - 14 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 22 - 24 ft. mg/Kg	OBG-TB-36 NE Property Area 10/20/1999 6 - 8 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 12 - 14 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 22 - 24 ft. mg/Kg	OBG-TB-37 NE Property Area 10/20/1999 6 - 8 ft. mg/Kg	SS-99-14 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	---	---	---	---	---	---	0.29 J
Naphthalene		13	---	---	---	---	---	---	---
Phenanthrene		50	---	---	---	---	---	---	0.33 J
Phenol		0.03	---	---	---	---	---	---	---
Pyrene		50	---	---	---	---	---	---	1 J
Bis(2-ethylhexyl)phthalate (BEHP)		50	0.13 J	0.2 J	0.33 J	0.43 J	0.072 J	0.49 J	0.21 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-15 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-16 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-17 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	HA-7 SE Property Area 08/10/1995 7.0 - 8.0 ft. mg/Kg	OBG-TB-22 SE Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-22 SE Property Area 10/18/1999 6 - 8 ft. mg/Kg	OBG-TB-23 SE Property Area 10/18/1999 2 - 4 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	---	---	---	---	---	---	---
2-Methylnaphthalene		36.4	0.047 J	---	---	---	---	---	---
2-Methylphenol		0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	---	---	---	---	---	---
Acenaphthene		50	---	---	0.94 J	---	---	---	---
Acenaphthylene		41	---	0.073 J	---	---	---	---	---
Anthracene		50	---	0.093 J	3.2 J	---	0.047 J	---	---
Benzo(a)anthracene		0.224	[0.3 J]	[0.68 J]	[7.7]	---	0.14 J	---	---
Benzo[a]pyrene		0.061	[0.42 J]	[0.89 J]	[6.9 J]	---	[0.13 J]	---	---
Benzo(b)fluoranthene		0.224	[0.56 J]	[1.2 J]	[10 J]	---	[0.26 J]	---	---
Benzo(ghi)perylene		50	0.41 J	0.76 J	1.7 J	---	---	---	---
Benzo(k)fluoranthene		0.224	0.2 J	[0.41 J]	[3.7 J]	---	0.066 J	---	---
Butyl benzyl phthalate		50	---	---	---	---	---	---	---
Carbazole		NC	---	0.068 J	2.5 J	---	---	---	---
Chrysene		0.4	[0.47 J]	[0.99 J]	[8.9]	---	0.22 J	---	---
Di-n-butyl phthalate		8.1	---	---	---	0.94	---	---	---
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	[0.17 J]	---	---	---	---	---
Dibenzofuran		6.2	---	---	0.49 J	---	---	---	---
Dimethyl phthalate		2	---	---	---	---	---	---	---
Fluoranthene		50	0.35 J	1.1 J	19	---	0.37 J	---	---
Fluorene		50	---	0.051 J	1 J	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	SS-99-15 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-16 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-17 NE Property Area 10/26/1999 0 - 1 ft. mg/Kg	HA-7 SE Property Area 08/10/1995 7.0 - 8.0 ft. mg/Kg	OBG-TB-22 SE Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-22 SE Property Area 10/18/1999 6 - 8 ft. mg/Kg	OBG-TB-23 SE Property Area 10/18/1999 2 - 4 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	0.31 J	0.65 J	2.1 J	---	---	---	---
Naphthalene		13	---	---	---	---	---	---	---
Phenanthrene		50	0.29 J	0.79	15	---	0.37 J	---	---
Phenol		0.03	---	---	---	---	---	---	---
Pyrene		50	1.2 J	2.6 J	21	---	0.71 J	---	---
Bis(2-ethylhexyl)phthalate (BEHP)		50	0.33 J	0.18 J	0.47 J	---	1.3 J	0.5	0.62 J

RACER0060657

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-23 SE Property Area 10/18/1999 6 - 8 ft. mg/Kg	SS-99-18 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-19 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-20 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-21 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	OBG-TB-20 SW Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-20 SW Property Area 10/18/1999 4 - 6 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	---	---	---	---	---	---	---
2-Methylnaphthalene		36.4	---	0.12 J	---	0.12 J	0.057 J	---	---
2-Methylphenol		0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	---	---	---	---	---	---
Acenaphthene		50	---	---	---	---	---	---	---
Acenaphthylene		41	---	---	---	---	---	---	---
Anthracene		50	---	0.064 J	---	---	---	---	---
Benzo(a)anthracene		0.224	---	[0.27 J]	---	0.15 J	0.1 J	---	---
Benzo[a]pyrene		0.061	---	[0.37 J]	---	[0.2 J]	[0.11 J]	---	---
Benzo(b)fluoranthene		0.224	---	[0.72 J]	0.043 J	[0.32 J]	0.19 J	---	---
Benzo(ghi)perylene		50	---	0.45 J	---	---	---	---	---
Benzo(k)fluoranthene		0.224	---	[0.23 J]	---	0.12 J	0.057 J	---	---
Butyl benzyl phthalate		50	---	0.22 J	---	---	---	---	---
Carbazole		NC	---	---	---	---	---	---	---
Chrysene		0.4	---	[0.52 J]	---	0.25 J	0.16 J	---	---
Di-n-butyl phthalate		8.1	---	0.089 J	---	---	---	---	---
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---	---	---	---	---
Dibenzofuran		6.2	---	---	---	---	---	---	---
Dimethyl phthalate		2	---	---	---	---	---	---	---
Fluoranthene		50	---	0.33 J	0.046 J	0.3 J	0.17 J	---	---
Fluorene		50	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-23 SE Property Area 10/18/1999 6 - 8 ft. mg/Kg	SS-99-18 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-19 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-20 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-21 SE Property Area 10/26/1999 0 - 1 ft. mg/Kg	OBG-TB-20 SW Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-20 SW Property Area 10/18/1999 4 - 6 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	---	0.35 J	---	---	---	---	---
Naphthalene		13	---	0.09 J	---	0.078 J	---	---	---
Phenanthrene		50	---	0.28 J	---	0.21 J	0.13 J	---	---
Phenol		0.03	---	---	---	---	---	---	---
Pyrene		50	---	0.87 J	0.041 J	0.4 J	0.32 J	---	---
Bis(2-ethylhexyl)phthalate (BEHP)		50	0.38 J	1 J	0.072 J	0.31 J	0.3 J	0.24 J	0.26 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 0 - 1 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 5 - 6 ft. mg/Kg	OBG-TB-33 SW Property Area 10/20/1999 5 - 6 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 0 - 1 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 10 - 12 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 4 - 6 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	---	---	---	---	---	---	---
2-Methylnaphthalene		36.4	0.095 J	---	---	---	---	---	---
2-Methylphenol		0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	---	---	---	---	---	---
Acenaphthene		50	0.11 J	---	---	---	---	---	---
Acenaphthylene		41	---	---	---	---	---	---	---
Anthracene		50	0.11 J	---	---	---	---	---	---
Benzo(a)anthracene		0.224	[0.32 J]	---	---	---	---	---	---
Benzo[a]pyrene		0.061	[0.37 J]	---	---	---	---	---	---
Benzo(b)fluoranthene		0.224	[0.64 J]	---	---	---	0.039 J	---	---
Benzo(ghi)perylene		50	0.27 J	---	---	---	---	---	---
Benzo(k)fluoranthene		0.224	0.22 J	---	---	---	---	---	---
Butyl benzyl phthalate		50	---	---	---	---	---	---	---
Carbazole		NC	0.05 J	---	---	---	---	---	---
Chrysene		0.4	[0.41 J]	---	---	---	---	---	---
Di-n-butyl phthalate		8.1	---	---	---	---	---	---	---
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---	---	---	---	---
Dibenzofuran		6.2	0.059 J	---	---	---	---	---	---
Dimethyl phthalate		2	---	---	---	---	---	---	---
Fluoranthene		50	0.37 J	---	---	---	0.047 J	---	---
Fluorene		50	0.081 J	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 0 - 1 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 2 - 4 ft. mg/Kg	OBG-TB-21 SW Property Area 10/18/1999 5 - 6 ft. mg/Kg	OBG-TB-33 SW Property Area 10/20/1999 5 - 6 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 0 - 1 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 10 - 12 ft. mg/Kg	OBG-TB-39 SW Property Area 10/21/1999 4 - 6 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	0.18 J	---	---	---	---	---	---
Naphthalene		13	---	---	---	---	---	---	---
Phenanthrene		50	0.54	---	---	---	---	---	---
Phenol		0.03	---	---	---	---	---	---	---
Pyrene		50	1.2 J	---	---	---	0.044 J	---	---
Bis(2-ethylhexyl)phthalate (BEHP)		50	0.23 J	0.2 J	0.28 J	0.059 J	0.67	0.18 J	0.41

RACER0060661

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 0 - 1 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 4 - 6 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 8 - 10 ft. mg/Kg	SS-99-01 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-02 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-03 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-04 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	---	---	---	---	---	---	---
2-Methylnaphthalene		36.4	---	---	---	0.21 J	---	---	0.1 J
2-Methylphenol		0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	---	---	---	---	---	---
Acenaphthene		50	---	---	---	0.065 J	---	---	---
Acenaphthylene		41	---	---	---	---	---	---	---
Anthracene		50	---	---	---	0.099 J	---	---	0.18 J
Benzo(a)anthracene		0.224	---	---	---	[0.59 J]	0.078 J	---	[0.66 J]
Benzo[a]pyrene		0.061	---	---	---	[0.69 J]	---	---	[0.61 J]
Benzo(b)fluoranthene		0.224	---	---	---	[1.4 J]	0.16 J	---	[0.99 J]
Benzo(ghi)perylene		50	---	---	---	---	---	---	0.42 J
Benzo(k)fluoranthene		0.224	---	---	---	---	0.041 J	---	[0.31 J]
Butyl benzyl phthalate		50	---	---	---	20 J	0.054 J	0.13 J	0.2 J
Carbazole		NC	---	---	---	0.065 J	---	---	0.1 J
Chrysene		0.4	---	---	---	[0.88 J]	0.13 J	0.062 J	[0.83 J]
Di-n-butyl phthalate		8.1	---	---	---	0.055 J	---	0.35 J	0.21 J
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---	---	---	---	---
Dibenzofuran		6.2	---	---	---	0.057 J	---	---	0.044 J
Dimethyl phthalate		2	---	---	---	0.051 J	0.19 J	---	0.84
Fluoranthene		50	---	---	---	0.64 J	0.11 J	0.04 J	0.88
Fluorene		50	---	---	---	0.055 J	---	---	0.071 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 0 - 1 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 4 - 6 ft. mg/Kg	OBG-TB-40 SW Property Area 10/21/1999 8 - 10 ft. mg/Kg	SS-99-01 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-02 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-03 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg	SS-99-04 SW Property Area 10/26/1999 0 - 1 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	0.1 J	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	---	---	---	0.61 J	---	---	0.38 J
Naphthalene		13	---	---	---	0.088 J	---	---	0.091 J
Phenanthrene		50	---	---	---	0.63 J	0.1 J	0.04 J	1.1
Phenol		0.03	---	---	---	[0.065 J]	---	---	---
Pyrene		50	---	---	---	1.8 J	0.32 J	0.14 J	2.5 J
Bis(2-ethylhexyl)phthalate (BEHP)		50	6.1	1	0.73	1.6 J	0.2 J	0.36 J	1.4 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-45 Thinner Tank Area 11/11/1999 0 - 1 ft. mg/Kg	OBG-TB-45 Thinner Tank Area 11/11/1999 4 - 6 ft. mg/Kg	OBG-TB-45 Thinner Tank Area 11/11/1999 6 - 8 ft. mg/Kg	OBG-TB-46 Thinner Tank Area 11/11/1999 0 - 1 ft. mg/Kg	OBG-TB-46 Thinner Tank Area 11/11/1999 4 - 6 ft. mg/Kg	OBG-TB-46 Thinner Tank Area 11/11/1999 6 - 8 ft. mg/Kg	OBG-TB-47 Thinner Tank Area 11/11/1999 0 - 1 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---	---	---	---	---
2,4-Dimethylphenol		NC	---	---	---	---	---	---	---
2-Methylnaphthalene		36.4	---	---	---	---	---	---	---
2-Methylphenol		0.1	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---	---	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---	---	---	---	---
4-Methylphenol		0.9	---	---	---	---	---	---	---
Acenaphthene		50	---	---	---	40	21	0.11 J	---
Acenaphthylene		41	---	---	---	---	---	---	---
Anthracene		50	---	---	---	[230]	[170 J]	0.88	---
Benzo(a)anthracene		0.224	---	---	---	[350 J]	[150 J]	[0.77]	0.16 J
Benzo[a]pyrene		0.061	---	---	---	[300 J]	[110 J]	[0.63]	[0.18 J]
Benzo(b)fluoranthene		0.224	0.051 J	---	---	[360 J]	[140 J]	[0.86]	[0.24 J]
Benzo(ghi)perylene		50	---	---	---	[310 J]	[130 J]	0.41	0.24 J
Benzo(k)fluoranthene		0.224	---	---	---	[120 J]	[59 J]	[0.34 J]	0.11 J
Butyl benzyl phthalate		50	---	---	---	---	---	---	---
Carbazole		NC	---	---	---	120	71	0.44	---
Chrysene		0.4	0.043 J	---	---	[380]	[170 J]	[0.82]	0.21 J
Di-n-butyl phthalate		8.1	---	---	---	---	---	---	---
Di-n-octyl phthalate		50	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---	[39 J]	[65 J]	[0.18 J]	---
Dibenzofuran		6.2	---	---	---	[21]	[12 J]	0.066 J	---
Dimethyl phthalate		2	---	---	---	---	---	---	---
Fluoranthene		50	0.06 J	---	---	[1200]	[560]	3	0.24 J
Fluorene		50	---	---	---	[65]	37	0.21 J	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-45 Thinner Tank Area 11/11/1999 0 - 1 ft. mg/Kg	OBG-TB-45 Thinner Tank Area 11/11/1999 4 - 6 ft. mg/Kg	OBG-TB-45 Thinner Tank Area 11/11/1999 6 - 8 ft. mg/Kg	OBG-TB-46 Thinner Tank Area 11/11/1999 0 - 1 ft. mg/Kg	OBG-TB-46 Thinner Tank Area 11/11/1999 4 - 6 ft. mg/Kg	OBG-TB-46 Thinner Tank Area 11/11/1999 6 - 8 ft. mg/Kg	OBG-TB-47 Thinner Tank Area 11/11/1999 0 - 1 ft. mg/Kg
Hexachlorobenzene		0.41	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene		3.2	---	---	---	[190 J]	[76 J]	0.29 J	0.12 J
Naphthalene		13	---	---	---	2.1 J	---	---	---
Phenanthrene		50	---	---	---	[670]	[450]	3.1	0.11 J
Phenol		0.03	---	---	---	---	---	---	---
Pyrene		50	0.052 J	---	---	[1000]	[480]	2.5	0.37
Bis(2-ethylhexyl)phthalate (BEHP)		50	4.5 J	0.2 J	0.077 J	---	---	0.26 J	0.35 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup mg/Kg	OBG-TB-47 Thinner Tank Area 11/11/1999 2 - 4 ft. mg/Kg	OBG-TB-47 Thinner Tank Area 11/11/1999 6 - 8 ft. mg/Kg	SS-99-05 Thinner Tank Area 10/26/1999 0 - 1 ft. mg/Kg
1,2-Dichlorobenzene		7.9	---	---	---
2,4-Dimethylphenol		NC	---	---	---
2-Methylnaphthalene		36.4	---	---	---
2-Methylphenol		0.1	---	---	---
4-Bromophenyl phenyl ether		NC	---	---	---
4-Chloro-3-methylphenol		0.24	---	---	---
4-Methylphenol		0.9	---	---	---
Acenaphthene		50	---	---	---
Acenaphthylene		41	---	---	---
Anthracene		50	---	---	---
Benzo(a)anthracene		0.224	---	---	---
Benzo[a]pyrene		0.061	---	---	---
Benzo(b)fluoranthene		0.224	---	---	0.06 J
Benzo(ghi)perylene		50	---	---	---
Benzo(k)fluoranthene		0.224	---	---	---
Butyl benzyl phthalate		50	---	---	---
Carbazole		NC	---	---	---
Chrysene		0.4	---	---	0.051 J
Di-n-butyl phthalate		8.1	---	---	---
Di-n-octyl phthalate		50	---	---	---
Dibenzo(a,h)anthracene		0.014	---	---	---
Dibenzofuran		6.2	---	---	---
Dimethyl phthalate		2	---	---	---
Fluoranthene		50	0.058 J	---	0.064 J
Fluorene		50	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-9
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	TAGM Recommended Soil Cleanup	OBG-TB-47	OBG-TB-47	SS-99-05
Sample ID / Area / Sample Date / Sample Depth / Units	mg/Kg	OBG-TB-47 Thinner Tank Area 11/11/1999 2 - 4 ft. mg/Kg	OBG-TB-47 Thinner Tank Area 11/11/1999 6 - 8 ft. mg/Kg	SS-99-05 Thinner Tank Area 10/26/1999 0 - 1 ft. mg/Kg
Hexachlorobenzene	0.41	---	---	---
Indeno(1,2,3-cd)pyrene	3.2	---	---	---
Naphthalene	13	---	---	---
Phenanthrene	50	0.057 J	---	---
Phenol	0.03	---	---	---
Pyrene	50	0.045 J	---	0.087 J
Bis(2-ethylhexyl)phthalate (BEHP)	50	0.14 J	0.13 J	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds TAGM Recommended Soil Cleanup criteria.

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Table 3-10
Former IFG Facility
Syracuse, NY
Soil Data Summary
Detected 8290 Dioxin and Furan Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	TAGM Recommended Soil Cleanup ng/Kg	SS-99-24	SS-99-25	SS-99-26	SS-99-27	SS-99-31
			0.0 - 0.5 ft.	0.0 - 0.5 ft.	0.0 - 0.5 ft.	0.0 - 0.5 ft.	0.0 - 0.5 ft.
			10/27/1999	10/27/1999	10/27/1999	10/27/1999	10/27/1999
			ng/Kg	ng/Kg	ng/Kg	ng/Kg	ng/Kg
1,2,3,4,6,7,8-Heptachlorodibenzop-dioxin		NC	6.45	14.4	571	21.2 J	32.9
1,2,3,4,6,7,8-Heptachlorodibenzofuran		NC	---	8.17	663	7.21 J	17.9
1,2,3,4,7,8,9-Heptachlorodibenzofuran		NC	---	---	150	---	---
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin		NC	---	---	4.98	---	---
1,2,3,4,7,8-Hexachlorodibenzofuran		NC	---	6.14	700	---	10.2
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin		NC	---	---	102	---	---
1,2,3,6,7,8-Hexachlorodibenzofuran		NC	---	---	221	---	---
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin		NC	---	---	38.0	---	---
1,2,3,7,8,9-Hexachlorodibenzofuran		NC	---	---	16.4	---	---
1,2,3,7,8-Pentachlorodibenzo-p-dioxin		NC	---	---	7.44	---	---
1,2,3,7,8-Pentachlorodibenzofuran		NC	---	---	335	---	6.05
2,3,4,6,7,8-Hexachlorodibenzofuran		NC	---	---	113	---	---
2,3,4,7,8-Pentachlorodibenzofuran		NC	---	14.8	1380	---	20.4
2,3,7,8-Tetrachlorodibenzo-p-dioxin		1000	---	---	2.49	---	---
2,3,7,8-Tetrachlorodibenzofuran		NC	4.89	8.38	670	8.66 J	43.5
Octachlorodibenzo-p-dioxin		NC	50.4	120	1880	185 J	238
Octachlorodibenzofuran		NC	---	20.0	1190	16.9 J	2838
Heptachlorodibenzo-p-dioxins		NC	12.6	28.3	1060	37.8 J	---
Heptachlorodibenzofurans		NC	---	16.7	1670	15.2 J	34.3
Hexachlorodibenzo-p-dioxins		NC	---	---	641	---	2.60
Hexachlorodibenzofurans		NC	---	12.0	2640	---	24.7
Pentachlorodibenzo-p-dioxins		NC	---	---	38.3	---	---
Pentachlorodibenzofurans		NC	---	63.0	5300	9.10 J	131
Tetrachlorodibenzo-p-dioxins		NC	---	---	63.6	---	2.60
Tetrachlorodibenzofurans		NC	52.0	200	19800	103 J	436

NOTES: U - not detected, J - estimated, --- - not detected
[] - Indicates that the compound exceeds the TAGM Recommended Soil Cleanup criteria.

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Table 3-11
Former IFG Facility
Syracuse, NY
Soil Data Summary
8290 Dioxins and Furans Toxicity Equivalent Quotient (TEQ) Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	Toxicity Equivalent Factor (TEF)	SS-99-24	SS-99-25	SS-99-26	SS-99-27	SS-99-31
	Sample Depth		0.0 - 0.5 ft.	0.0 - 0.5 ft.	0.0 - 0.5 ft.	0.0 - 0.5 ft.	0.0 - 0.5 ft.
	Sample Date		10/27/1999	10/27/1999	10/27/1999	10/27/1999	10/27/1999
	Units		ng/Kg	ng/Kg	ng/Kg	ng/Kg	ng/Kg
2,3,7,8-Tetrachlorodibenzo-p-dioxin		1	1.00	0.83	2.49	1.00	1.00
2,3,7,8-Tetrachlorodibenzofuran		0.1	0.49	0.84	67.00	0.87	4.35
1,2,3,7,8-Pentachlorodibenzofuran		0.05	0.25	0.21	16.75	0.25	0.30
1,2,3,7,8-Pentachlorodibenzo-p-dioxin		0.5	2.50	2.10	3.72	2.50	2.50
2,3,4,7,8-Pentachlorodibenzofuran		0.5	2.50	7.40	690.00	2.50	10.20
1,2,3,4,7,8-Hexachlorodibenzofuran		0.1	0.50	0.61	70.00	0.50	1.02
1,2,3,6,7,8-Hexachlorodibenzofuran		0.1	0.50	0.42	22.10	0.50	0.50
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin		0.1	0.50	0.42	0.50	0.50	0.50
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin		0.1	0.50	0.42	10.20	0.50	0.50
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin		0.1	0.50	0.42	3.80	0.50	0.50
2,3,4,6,7,8-Hexachlorodibenzofuran		0.1	0.50	0.42	11.30	0.50	0.50
1,2,3,7,8,9-Hexachlorodibenzofuran		0.1	0.50	0.42	1.64	0.50	0.50
1,2,3,4,6,7,8-Heptachlorodibenzofuran		0.01	0.05	0.08	6.63	0.07	0.18
1,2,3,4,6,7,8-Heptachlorodibenzop-dioxin		0.01	0.06	0.14	5.71	0.21	0.33
1,2,3,4,7,8,9-Heptachlorodibenzofuran		0.01	0.05	0.04	1.50	0.05	0.05
Octachlorodibenzo-p-dioxin		0.001	0.05	0.12	1.88	0.19	0.24
Octachlorodibenzofuran		0.001	0.01	0.02	1.19	0.02	2.84
Total TEQ			10.46	14.92	916.41	11.15	26.01

NOTES:

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-12A
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	NYS Class GA Standards (3/98) ug/L	MWI-1 Bldg. 08/18/1999 ug/L	MWI-2 Bldg. 08/18/1999 ug/L	MWI-3 Bldg. 08/18/1999 ug/L	WT-3R Bldg. 08/18/1999 ug/L	OBG-13 IWT Area 11/04/1999 ug/L	OBG-5 Ley Creek 11/10/1999 ug/L	MW-2D N. Property Area 11/08/1999 ug/L
Chloroform		7	---	---	---	---	4 NJ	---	---
Methylene chloride		5	---	---	---	---	---	[8 NJ]	---
Ethylbenzene		5	---	---	---	---	---	---	---
Toluene		5	---	---	---	---	---	2 NJ	---
Trichloroethene		5	3	[13]	[25000]	[20]	---	---	---
Vinyl chloride		2	[6]	---	---	---	---	---	[45]
Xylene (total)		5	---	---	---	---	---	---	---
cis-1,2-Dichloroethene		5	2	[47]	[4700]	2	---	---	---
trans-1,2-Dichloroethene		5	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-12A
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Method 8021 Volatile Organic Compound Data

Sample ID / Area / Sample Date / Sample Depth / Units	NYS Class GA Standards (3/98)	MW-2S	MW-3D	MW-4D	MW-5D	OBG-6D	OBG-7D	OBG-8D
Area		N. Property Area	N. Property Area	N. Property Area	N. Property Area	N. Property Area	N. Property Area	N. Property Area
Sample Date		11/08/1999	11/05/1999	11/03/1999	11/05/1999	11/03/1999	11/04/1999	11/02/1999
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound								
Chloroform	7	---	---	---	---	---	2 NJ	---
Methylene chloride	5	---	---	---	---	---	---	---
Ethylbenzene	5	---	---	---	---	---	---	---
Toluene	5	---	---	---	---	---	---	---
Trichloroethene	5	2	[37000]	[27000 J]	[17000]	[65000]	---	[2800]
Vinyl chloride	2	---	---	---	---	---	[12]	---
Xylene (total)	5	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	5	---	---	[1500]	---	[3400]	---	[450]
trans-1,2-Dichloroethene	5	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-12A
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	NYS Class GA Standards (3/98) ug/L	OBG-9D N. Property Area 11/02/1999 ug/L	W-6D N. Property Area 11/04/1999 ug/L	OBG-10D NE Property Area 11/08/1999 ug/L	OBG-10S NE Property Area 11/08/1999 ug/L	W-11S NE Property Area 11/08/1999 ug/L	U-1S SE Property Area 11/03/1999 ug/L	OBG-15 SW Property Area 11/11/1999 ug/L
Chloroform		7	---	---	---	---	---	---	---
Methylene chloride		5	---	---	---	---	---	---	[11 NJ]
Ethylbenzene		5	---	---	---	---	---	4 NJ	---
Toluene		5	---	---	---	---	---	---	---
Trichloroethene		5	---	---	[170000]	---	---	---	[230]
Vinyl chloride		2	[23]	---	---	---	---	---	---
Xylene (total)		5	---	---	---	---	---	[31 NJ]	---
cis-1,2-Dichloroethene		5	[230]	[20]	[11000]	[15]	[380]	---	[36]
trans-1,2-Dichloroethene		5	---	---	---	---	[57]	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-12A
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	NYS Class GA Standards (3/98) ug/L	OBG-PZ-1 Thinner Tank Area 07/08/1999 ug/L	OBG-PZ-2 Thinner Tank Area 07/08/1999 ug/L	OBG-PZ-3 Thinner Tank Area 07/08/1999 ug/L	T-1 Thinner Tank Area 11/12/1999 ug/L	T-10 Thinner Tank Area 07/29/1999 ug/L	T-13 Thinner Tank Area 07/29/1999 ug/L	T-13 Thinner Tank Area 11/11/1999 ug/L
Chloroform		7	---	---	---	---	---	---	---
Methylene chloride		5	---	---	---	---	---	---	---
Ethylbenzene		5	---	[3500]	---	---	[46]	---	---
Toluene		5	---	---	---	---	---	---	---
Trichloroethene		5	---	---	1	---	---	---	---
Vinyl chloride		2	---	---	---	---	---	---	---
Xylene (total)		5	[1500]	[22000]	---	[9]	[290]	[410]	[230]
cis-1,2-Dichloroethene		5	---	---	[16]	---	---	---	---
trans-1,2-Dichloroethene		5	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-12A
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	NYS Class GA Standards (3/98) ug/L	T-15 Thinner Tank Area 07/29/1999 ug/L	T-15 Thinner Tank Area 11/11/1999 ug/L	T-2 Thinner Tank Area 07/29/1999 ug/L	T-2 Thinner Tank Area 11/11/1999 ug/L	T-21 Thinner Tank Area 07/29/1999 ug/L	T-21 Thinner Tank Area 11/11/1999 ug/L	T-24 Thinner Tank Area 11/11/1999 ug/L
Chloroform		7	---	---	---	---	---	---	---
Methylene chloride		5	---	---	---	---	---	---	---
Ethylbenzene		5	[6300]	---	[3000]	[26000]	[39000]	[30000]	---
Toluene		5	---	---	---	[1800]	---	[2400]	---
Trichloroethene		5	---	---	---	---	---	---	---
Vinyl chloride		2	---	---	---	---	---	---	---
Xylene (total)		5	[29000]	[9400]	[29000]	[150000]	[200000]	[160000]	3
cis-1,2-Dichloroethene		5	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		5	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-12A
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	Sample ID Area Sample Date Sample Depth Units	NYS Class GA Standards (3/98) ug/L	T-26 Thinner Tank Area 07/29/1999 ug/L	T-26 Thinner Tank Area 11/12/1999 ug/L	T-3 Thinner Tank Area 07/29/1999 ug/L	T-3 Thinner Tank Area 11/11/1999 ug/L	T-4 Thinner Tank Area 07/29/1999 ug/L	T-4 Thinner Tank Area 11/12/1999 ug/L	T-5 Thinner Tank Area 11/11/1999 ug/L
Chloroform		7	---	---	---	---	---	---	---
Methylene chloride		5	---	---	---	---	---	---	---
Ethylbenzene		5	---	---	[9100]	[5100]	[12000]	[7800]	---
Toluene		5	---	---	---	---	---	---	---
Trichloroethene		5	---	---	---	---	---	---	---
Vinyl chloride		2	---	---	---	---	---	---	---
Xylene (total)		5	[21]	[10]	[44000]	[25000]	[48000]	[54000]	[420]
cis-1,2-Dichloroethene		5	---	---	---	---	---	---	---
trans-1,2-Dichloroethene		5	---	---	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-12B
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Method 8260 Volatile Organic Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	NYS Class GA Standards (3/98) ug/L	MWI-3 Bldg. 08/18/1999 ug/L	OBG-PZ-1 Thinner Tank Area 07/08/1999 ug/L	OBG-PZ-2 Thinner Tank Area 07/08/1999 ug/L	OBG-PZ-3 Thinner Tank Area 07/08/1999 ug/L
Benzene, 1,2,4-trimethyl		5	---	2	[25]	---
Benzene, 1,3,5-trimethyl-		5	---	1	[9 J]	---
Benzene		1	---	0.5	[5 J]	---
Chlorobenzene		5	---	---	[9 J]	---
Ethylbenzene		5	---	[37]	[4200]	---
Isopropylbenzene		5	---	[7]	[28]	---
Naphthalene		10	---	0.6	[28]	---
Toluene		5	---	[20]	[30]	---
Trichloroethene		5	[21000 J]	---	---	1 J
Vinyl chloride		2	[140 J]	---	---	---
Xylene (total)		5	---	[910]	[20000]	---
cis-1,2-Dichloroethene		5	[3800 J]	---	[42]	[11]
n-Propylbenzene		5	---	2	[8 J]	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-13
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	NYS Class GA Standards (3/98) ug/L	OBG-13 IWT Area 11/04/1999 ug/L	MW-3S N. Property Area 11/05/1999 ug/L	OBG-9D N. Property Area 11/02/1999 ug/L	OBG-9S N. Property Area 11/02/1999 ug/L	U-1D SE Property Area 11/02/1999 ug/L
2,4-Dimethylphenol		50	---	---	---	4 J	---
Diethyl phthalate		50	---	---	20	---	---
Bis(2-ethylhexyl)phthalate (BEHP)		5	4 J	[20]	---	---	[230]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-14
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	NYS Class GA Standards (3/98) ug/L	MWI-1 Bldg. 08/18/1999 ug/L	MWI-2 Bldg. 08/18/1999 ug/L	MWI-3 Bldg. 08/18/1999 ug/L	WT-3R Bldg. 08/18/1999 ug/L	OBG-13 IWT Area 11/04/1999 ug/L	OBG-3 Ley Creek 11/10/1999 ug/L	OBG-7A Ley Creek 11/09/1999 ug/L
Aroclor 1242		0.09	---	---	---	---	[0.2 J]	---	[0.5 NJ]
Aroclor 1248		0.09	0.08	[5 J]	[0.2 J]	0.09	---	0.07 NJ	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-14
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	NYS Class GA Standards (3/98) ug/L	MW-2S N. Property Area 11/08/1999 ug/L	MW-3S N. Property Area 11/05/1999 ug/L	MW-4S N. Property Area 11/03/1999 ug/L	MW-5S N. Property Area 11/05/1999 ug/L	OBG-6D N. Property Area 11/03/1999 ug/L	OBG-6S N. Property Area 11/03/1999 ug/L	OBG-9D N. Property Area 11/02/1999 ug/L
Aroclor 1242		0.09	---	---	[0.9 J]	[9]	[0.2 J]	[2 J]	[2 J]
Aroclor 1248		0.09	[18]	[0.3 J]	---	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-14
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected PCB Data

Compound	Sample ID Area Sample Date Sample Depth Units	NYS Class GA Standards (3/98) ug/L	OBG-9S N. Property Area 11/02/1999 ug/L	W-1S N. Property Area 11/10/1999 ug/L	W-6D N. Property Area 11/04/1999 ug/L	W-6S N. Property Area 11/04/1999 ug/L	OBG-15 SW Property Area 11/11/1999 ug/L
Aroclor 1242		0.09	[3 J]	[0.8 NJ]	---	[4]	---
Aroclor 1248		0.09	---	---	[3]	---	[0.1 NJ]

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-15
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	NYS Class GA Standards (3/98) mg/L	MWI-1 Bldg. 08/18/1999 mg/L	MWI-2 Bldg. 08/18/1999 mg/L	MWI-3 Bldg. 08/18/1999 mg/L	WT-3R Bldg. 08/18/1999 mg/L	OBG-12 IWT Area 11/03/1999 mg/L	OBG-13 IWT Area 11/04/1999 mg/L	OBG-13 (FF) IWT Area 11/04/1999 mg/L
Arsenic		0.025	---	---	---	---	0.0058	0.0027 J	---
Chromium		0.05	0.0044 J	0.0134	0.0074 J	0.0034 J	---	---	---
Copper		0.2	---	---	---	---	---	0.0125	0.0045 J
Lead		0.025	---	---	---	---	---	---	---
Nickel		0.1	0.0665	0.0029 J	0.0295 J	0.0018 J	0.0034 J	0.0074 J	0.0047 J
Zinc		2.0	---	---	---	---	0.0055 J	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-15
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	NYS Class GA Standards (3/98) mg/L	OBG-2 Ley Creek 11/10/1999 mg/L	OBG-3 Ley Creek 11/10/1999 mg/L	OBG-3D Ley Creek 11/09/1999 mg/L	OBG-5 Ley Creek 11/10/1999 mg/L	OBG-7A Ley Creek 11/09/1999 mg/L	MW-3S N. Property Area 11/05/1999 mg/L	MW-4D N. Property Area 11/03/1999 mg/L
Arsenic		0.025	---	---	0.0054	0.0035 J	---	---	0.0082
Chromium		0.05	0.0095 J	0.0088 J	---	---	0.0072 J	0.0045 J	---
Copper		0.2	0.0098 J	0.0031 J	---	0.0015 J	0.0017 J	0.0011 J	---
Lead		0.025	---	---	---	---	0.0198	---	---
Nickel		0.1	0.0298 J	0.0117 J	0.0012 J	0.0162 J	0.0478 J	0.0044 J	0.0032 J
Zinc		2.0	0.129	0.461	0.0201	0.532	[2.28]	0.0089 J	0.0028 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-15
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Metals Data

Compound	Sample ID / Area / Sample Date / Sample Depth / Units	NYS Class GA Standards (3/98) mg/L	MW-4S N. Property Area 11/03/1999 mg/L	OBG-6D N. Property Area 11/03/1999 mg/L	OBG-6S N. Property Area 11/03/1999 mg/L	OBG-7D N. Property Area 11/04/1999 mg/L	OBG-7S N. Property Area 11/04/1999 mg/L	OBG-8D N. Property Area 11/02/1999 mg/L	OBG-8S N. Property Area 11/02/1999 mg/L
Arsenic		0.025	0.0082	0.0133	---	0.0067	0.0045 J	0.0084	0.0036 J
Chromium		0.05	---	---	---	0.0057 J	0.0063 J	0.0052 J	0.0049 J
Copper		0.2	0.0012 J	---	0.0041 J	0.00096 J	---	0.0007 J	0.001 J
Lead		0.025	---	---	---	---	---	---	---
Nickel		0.1	0.0022 J	0.0124 J	0.0033 J	0.0025 J	0.002 J	0.002 J	0.0027 J
Zinc		2.0	0.004 J	0.0045 J	0.0076 J	---	---	---	---

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-15
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Metals Data

Compound	Sample ID Area Sample Date Sample Depth Units	NYS Class GA Standards (3/98) mg/L	OBG-9D N. Property Area 11/02/1999 mg/L	OBG-9S N. Property Area 11/02/1999 mg/L	W-1D N. Property Area 11/09/1999 mg/L	W-1S N. Property Area 11/10/1999 mg/L	W-6D N. Property Area 11/04/1999 mg/L	W-6S N. Property Area 11/04/1999 mg/L	OBG-10D NE Property Area 11/08/1999 mg/L
Arsenic		0.025	0.0092	[0.0277]	---	0.0028 J	---	0.0065	---
Chromium		0.05	0.005 J	0.0057 J	---	---	0.0068 J	0.007 J	---
Copper		0.2	---	---	0.0017 J	---	0.00056 J	---	---
Lead		0.025	---	---	---	---	---	---	---
Nickel		0.1	0.0042 J	0.013 J	0.0331 J	0.0146 J	0.0031 J	0.0032 J	0.0124 J
Zinc		2.0	---	---	0.0865	0.0032 J	---	---	0.0044 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-15
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Metals Data

Sample ID Area Sample Date Sample Depth Units	NYS Class GA Standards (3/98) mg/L	OBG-10S NE Property Area 11/08/1999 mg/L	W-11D NE Property Area 11/08/1999 mg/L	W-11S NE Property Area 11/08/1999 mg/L	P-2 SE Property Area 11/08/1999 mg/L	U-1D SE Property Area 11/02/1999 mg/L	U-1S SE Property Area 11/03/1999 mg/L	OBG-11 SW Property Area 11/08/1999 mg/L
Compound								
Arsenic	0.025	---	0.0066	---	---	---	---	---
Chromium	0.05	---	---	---	---	0.0043 J	0.004 J	---
Copper	0.2	0.0015 J	---	---	0.0008 J	---	---	0.0026 J
Lead	0.025	---	0.0075	---	---	---	---	---
Nickel	0.1	0.0022 J	0.0014 J	0.0011 J	0.001 J	0.0043 J	0.0094 J	0.0028 J
Zinc	2.0	0.005 J	0.981	0.0204	0.0065 J	---	---	0.0041 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

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Table 3-15
Former IFG Facility
Syracuse, NY
Ground Water Data Summary
Detected Metals Data

Compound	Sample ID Area Sample Date Sample Depth Units	NYS Class GA Standards (3/98) mg/L	OBG-15 SW Property Area 11/11/1999 mg/L	OBG-15 (FF) SW Property Area 11/11/1999 mg/L	P-9 Thinner Tank Area 11/11/1999 mg/L
Arsenic		0.025	---	---	---
Chromium		0.05	---	---	---
Copper		0.2	---	---	0.0017 J
Lead		0.025	---	---	---
Nickel		0.1	0.0028 J	0.0017 J	0.0024 J
Zinc		2.0	0.0097 J	0.0051 J	0.0076 J

NOTES: J - estimated value, N - tentatively identified, --- - not detected/analyzed, NC - no criteria, SB - site background.
[] - Exceeds NYS Class GA Standard.

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DBF File: N:\3247\21535\SRI\TEMPDATA.DBF
FXP File: N:\3247\21535\SRI\TABLEPR.FXP

File Number: 3247.21535

Table 3-16. *Storm Sewer Data S\ummary.*

Investigation	Sample Location	Date	Chromium (mg/l)	Arsenic (mg/l)	Selenium (mg/l)	Antimony (mg/l)	Lead (mg/l)	Copper (mg/l)	Zinc (mg/l)	Total Cyanide (mg/l)	Free Cyanide (mg/l)	TSS (mg/l)	pH (S.U.)
Investigation	Sample Location	Date	Chromium (mg/l)	Arsenic (mg/l)	Selenium (mg/l)	Antimony (mg/l)	Lead (mg/l)	Copper (mg/l)	Zinc (mg/l)	Total Cyanide (mg/l)	Free Cyanide (mg/l)	TSS (mg/l)	pH (S.U.)
OBGSOA87	A1	5-22-87; 0 hr	-	-	-	-	<0.05	0.06	0.33	<0.05	-	-	-
		5-22-87; 0.5 hr	-	-	-	-	<0.05	0.04	0.26	<0.05	-	-	-
		5-22-87; 1 hr	-	-	-	-	<0.05	0.04	0.23	<0.05	-	-	-
		5-28-87; 0 hr	-	-	-	-	0.73	0.03	0.59	-	0.29	-	-
		5-28-87; 0.5 hr	-	-	-	-	0.09	0.03	0.24	-	<0.05	-	-
		5-28-87; 1 hr	-	-	-	-	0.14	0.08	0.62	-	<0.05	-	-
		5-28-87; 2 hr	-	-	-	-	0.05	0.03	0.21	-	<0.05	-	-
		5-28-87; 3 hr	-	-	-	-	0.05	0.03	0.16	-	<0.05	-	-
		6-3-87; 0 hr	-	-	-	-	0.05	0.04	0.26	-	<0.05	-	-
		6-3-87; 0.5 hr	-	-	-	-	0.05	0.04	0.26	-	<0.05	-	-
		6-3-87; 1 hr	-	-	-	-	0.05	0.03	0.17	-	<0.05	-	-
		6-8-87; 0 hr	-	-	-	-	0.05	0.03	0.12	-	<0.05	-	-
		6-8-87; 0.5 hr	-	-	-	-	0.05	0.03	0.11	-	<0.05	-	-
		6-8-87; 1 hr	-	-	-	-	0.05	0.04	0.14	-	<0.05	-	-
OBGSSSS89	A4	6-9-89	-	-	-	-	-	-	-	-	-	6	7.78
OBGSSSS89	A4 plugged line	6-9-89	-	-	-	-	-	-	-	-	-	7900	7.56
OBGSSSS89	A4 catch basin	6-9-89	-	-	-	-	-	-	-	-	-	11	9.55
OBGSSSS89	A4 collection sump	6-9-89	-	-	-	-	-	-	-	-	-	10	7.87
OBGSSSS89	A5	6-9-89	-	-	-	-	-	-	-	-	-	7	7.72
OBGSSSS89	A7	6-9-89	-	-	-	-	-	-	-	-	-	150	7.92
OBGSSSS89	A8	6-9-89	-	-	-	-	-	-	-	-	-	9	7.84
OBGSSSS89	A8A	6-9-89	-	-	-	-	-	-	-	-	-	9	7.77
EDIHI85	A8B	6-7-85	0.04	<0.002	0.002	<0.01	<0.02	<0.01	0.1	-	-	-	-
OBGSOA87		5-22-87; 0 hr	-	-	-	-	<0.05	<0.01	0.02	<0.05	-	-	-
		5-22-87; 0.5 hr	-	-	-	-	<0.05	<0.01	0.01	<0.05	-	-	-
		5-22-87; 1 hr	-	-	-	-	<0.05	<0.01	0.02	<0.05	-	-	-
		5-28-87; 0 hr	-	-	-	-	0.08	0.02	0.07	-	<0.05	-	-
		5-28-87; 0.5 hr	-	-	-	-	0.09	<0.01	<0.01	-	<0.05	-	-
		5-28-87; 1 hr	-	-	-	-	0.06	<0.01	<0.01	-	<0.05	-	-
		5-28-87; 2 hr	-	-	-	-	<0.05	<0.01	<0.01	-	<0.05	-	-
		5-28-87; 3 hr	-	-	-	-	-	-	-	-	-	-	-
		6-3-87; 0 hr	-	-	-	-	<0.05	0.01	0.05	-	<0.05	-	-
		6-3-87; 0.5 hr	-	-	-	-	0.07	<0.01	0.01	-	<0.05	-	-
		6-3-87; 1 hr	-	-	-	-	0.05	<0.01	<0.01	-	<0.05	-	-
		6-8-87; 0 hr	-	-	-	-	0.07	<0.01	0.01	-	<0.05	-	-
		6-8-87; 0.5 hr	-	-	-	-	<0.05	<0.01	0.01	-	<0.05	-	-
		6-8-87; 1 hr	-	-	-	-	<0.05	<0.01	0.01	-	<0.05	-	-

Table 3-16. *Storm Sewer Data S\ummary.*

Investigation	Sample Location	Date	Chromium (mg/l)	Arsenic (mg/l)	Selenium (mg/l)	Antimony (mg/l)	Lead (mg/l)	Copper (mg/l)	Zinc (mg/l)	Total Cyanide (mg/l)	Free Cyanide (mg/l)	TSS (mg/l)	pH (S.U.)
		6-9-89	-	-	-	-	-	-	-	-	-	44	7.76
OBGSSSS89	A9	6-9-89	-	-	-	-	-	-	-	-	-	41	7.48
EDIHI85	BM1	6-7-85	<0.02	0.0036	0.0096	<0.1	<0.02	<0.01	<0.02	-	-	-	-
EDIHI85	BM2	6-7-85	0.05	<0.002	<0.002	<0.1	<0.02	<0.01	<0.02	-	-	-	-
OBGSOA87	C1	5-22-87; 0 hr	-	-	-	-	0.37	0.2	0.43	<0.05	-	-	-
		5-22-87; 0.5 hr	-	-	-	-	0.25	0.18	0.31	<0.05	-	-	-
		5-22-87; 1 hr	-	-	-	-	0.25	0.17	0.29	0.36	-	-	-
		5-28-87; 0 hr	-	-	-	-	0.1	0.02	0.04	-	<0.05	-	-
		5-28-87; 0.5 hr	-	-	-	-	0.12	0.01	0.08	-	<0.05	-	-
		5-28-87; 1 hr	-	-	-	-	0.45	0.2	0.9	-	<0.05	-	-
		5-28-87; 2 hr	-	-	-	-	0.18	0.18	0.19	-	<0.05	-	-
		5-28-87; 3 hr	-	-	-	-	0.15	0.16	0.14	-	<0.05	-	-
		6-3-87; 0 hr	-	-	-	-	0.05	0.03	0.09	-	<0.05	-	-
		6-3-87; 0.5 hr	-	-	-	-	0.31	0.19	0.59	-	<0.05	-	-
		6-3-87; 1 hr	-	-	-	-	0.2	0.15	0.24	-	<0.05	-	-
		6-8-87; 0 hr	-	-	-	-	0.1	0.03	0.12	-	<0.05	-	-
		6-8-87; 0.5 hr	-	-	-	-	0.08	0.02	0.05	-	<0.05	-	-
		6-8-87; 1 hr	-	-	-	-	0.07	0.03	0.06	-	<0.05	-	-
EDIHI85	C10	6-7-85	0.02	<0.002	<0.002	0.16	0.04	0.04	0.12	-	-	-	-
OBGSOA87		5-22-87; 0 hr	-	-	-	-	0.22	0.13	0.21	<0.05	-	-	-
		5-22-87; 0.5 hr	-	-	-	-	0.13	0.1	0.15	<0.05	-	-	-
		5-22-87; 1 hr	-	-	-	-	0.1	0.07	0.11	<0.05	-	-	-
		5-28-87; 0 hr	-	-	-	-	0.33	0.23	0.31	-	<0.05	-	-
		5-28-87; 0.5 hr	-	-	-	-	0.19	0.25	0.2	-	<0.05	-	-
		5-28-87; 1 hr	-	-	-	-	0.07	0.29	0.09	-	<0.05	-	-
		5-28-87; 2 hr	-	-	-	-	0.08	0.05	0.07	-	<0.05	-	-
		5-28-87; 3 hr	-	-	-	-	-	-	-	-	-	-	-

Table 3-16. *Storm Sewer Data Slummary.*

Investigation	Sample Location	Date	Chromium (mg/l)	Arsenic (mg/l)	Selenium (mg/l)	Antimony (mg/l)	Lead (mg/l)	Copper (mg/l)	Zinc (mg/l)	Total Cyanide (mg/l)	Free Cyanide (mg/l)	TSS (mg/l)	pH (S.U.)
		6-3-87; 0 hr	-	-	-	-	0.27	0.27	0.72	-	<0.05	-	-
		6-3-87; 0.5 hr	-	-	-	-	0.17	0.16	0.28	-	<0.05	-	-
		6-3-87; 1 hr	-	-	-	-	0.1	0.13	0.13	-	<0.05	-	-
		6-8-87; 0 hr	-	-	-	-	0.1	0.06	0.12	-	<0.05	-	-
		6-8-87; 0.5 hr	-	-	-	-	0.1	0.04	0.05	-	<0.05	-	-
		6-8-87; 1 hr	-	-	-	-	0.12	0.03	0.06	-	<0.05	-	-

Table 3-16. *Storm Sewer Data S\ummary.*

Investigation	Sample Location	Date	Chromium (mg/l)	Arsenic (mg/l)	Selenium (mg/l)	Antimony (mg/l)	Lead (mg/l)	Copper (mg/l)	Zinc (mg/l)	Total Cyanide (mg/l)	Free Cyanide (mg/l)	TSS (mg/l)	pH (S.U.)
Investigation	Sample Location	Date	Chromium (mg/l)	Arsenic (mg/l)	Selenium (mg/l)	Antimony (mg/l)	Lead (mg/l)	Copper (mg/l)	Zinc (mg/l)	Total Cyanide (mg/l)	Free Cyanide (mg/l)	TSS (mg/l)	pH (S.U.)
OBGSOA87	A1	5-22-87; 0 hr	-	-	-	-	<0.05	0.06	0.33	<0.05	-	-	-
		5-22-87; 0.5 hr	-	-	-	-	<0.05	0.04	0.26	<0.05	-	-	-
		5-22-87; 1 hr	-	-	-	-	<0.05	0.04	0.23	<0.05	-	-	-
		5-28-87; 0 hr	-	-	-	-	0.73	0.03	0.59	-	0.29	-	-
		5-28-87; 0.5 hr	-	-	-	-	0.09	0.03	0.24	-	<0.05	-	-
		5-28-87; 1 hr	-	-	-	-	0.14	0.08	0.62	-	<0.05	-	-
		5-28-87; 2 hr	-	-	-	-	0.05	0.03	0.21	-	<0.05	-	-
		5-28-87; 3 hr	-	-	-	-	0.05	0.03	0.16	-	<0.05	-	-
		6-3-87; 0 hr	-	-	-	-	0.05	0.04	0.26	-	<0.05	-	-
		6-3-87; 0.5 hr	-	-	-	-	0.05	0.04	0.26	-	<0.05	-	-
		6-3-87; 1 hr	-	-	-	-	0.05	0.03	0.17	-	<0.05	-	-
		6-8-87; 0 hr	-	-	-	-	0.05	0.03	0.12	-	<0.05	-	-
		6-8-87; 0.5 hr	-	-	-	-	0.05	0.03	0.11	-	<0.05	-	-
		6-8-87; 1 hr	-	-	-	-	0.05	0.04	0.14	-	<0.05	-	-
OBGSSSS89	A4	6-9-89	-	-	-	-	-	-	-	-	-	-	-
OBGSSSS89	A4 plugged line	6-9-89	-	-	-	-	-	-	-	-	-	6	7.76
OBGSSSS89	A4 catch basin	6-9-89	-	-	-	-	-	-	-	-	-	7900	7.58
OBGSSSS89	A4 collection sump	6-9-89	-	-	-	-	-	-	-	-	-	11	9.55
OBGSSSS89	A5	6-9-89	-	-	-	-	-	-	-	-	-	10	7.87
OBGSSSS89.	A7	6-9-89	-	-	-	-	-	-	-	-	-	7	7.72
OBGSSSS89	A8	6-9-89	-	-	-	-	-	-	-	-	-	150	7.92
OBGSSSS89	A8A	6-9-89	-	-	-	-	-	-	-	-	-	9	7.84
EDIHI85	A8B	6-7-85	0.04	<0.002	0.002	<0.01	<0.02	<0.01	0.1	-	-	9	7.77
OBGSOA87		5-22-87; 0 hr	-	-	-	-	<0.05	<0.01	0.02	<0.05	-	-	-
		5-22-87; 0.5 hr	-	-	-	-	<0.05	<0.01	0.01	<0.05	-	-	-
		5-22-87; 1 hr	-	-	-	-	<0.05	<0.01	0.02	<0.05	-	-	-
		5-28-87; 0 hr	-	-	-	-	0.08	0.02	0.07	-	<0.05	-	-
		5-28-87; 0.5 hr	-	-	-	-	0.09	<0.01	<0.01	-	<0.05	-	-
		5-28-87; 1 hr	-	-	-	-	0.06	<0.01	<0.01	-	<0.05	-	-
		5-28-87; 2 hr	-	-	-	-	<0.05	<0.01	<0.01	-	<0.05	-	-
		5-28-87; 3 hr	-	-	-	-	-	-	-	-	-	-	-
		6-3-87; 0 hr	-	-	-	-	<0.05	0.01	0.05	-	<0.05	-	-
		6-3-87; 0.5 hr	-	-	-	-	0.07	<0.01	0.01	-	<0.05	-	-
		6-3-87; 1 hr	-	-	-	-	0.05	<0.01	<0.01	-	<0.05	-	-
		6-8-87; 0 hr	-	-	-	-	0.07	<0.01	0.01	-	<0.05	-	-
		6-8-87; 0.5 hr	-	-	-	-	<0.05	<0.01	0.01	-	<0.05	-	-
		6-8-87; 1 hr	-	-	-	-	<0.05	<0.01	0.01	-	<0.05	-	-

Table 3-16. *Storm Sewer Data S\ummary.*

Investigation	Sample Location	Date	Chromium (mg/l)	Arsenic (mg/l)	Selenium (mg/l)	Antimony (mg/l)	Lead (mg/l)	Copper (mg/l)	Zinc (mg/l)	Total Cyanide (mg/l)	Free Cyanide (mg/l)	TSS (mg/l)	pH (S.U.)
		6-9-89	-	-	-	-	-	-	-	-	-	44	7.76
OBGSSSS89	A9	6-9-89	-	-	-	-	-	-	-	-	-	41	7.48
EDIHI85	BM1	6-7-85	<0.02	0.0036	0.0096	<0.1	<0.02	<0.01	<0.02	-	-	-	-
EDIHI85	BM2	6-7-85	0.05	<0.002	<0.002	<0.1	<0.02	<0.01	<0.02	-	-	-	-
OBGSOA87	C1	5-22-87; 0 hr	-	-	-	-	0.37	0.2	0.43	<0.05	-	-	-
		5-22-87; 0.5 hr	-	-	-	-	0.25	0.18	0.31	<0.05	-	-	-
		5-22-87; 1 hr	-	-	-	-	0.25	0.17	0.29	0.36	-	-	-
		5-28-87; 0 hr	-	-	-	-	0.1	0.02	0.04	-	<0.05	-	-
		5-28-87; 0.5 hr	-	-	-	-	0.12	0.01	0.08	-	<0.05	-	-
		5-28-87; 1 hr	-	-	-	-	0.45	0.2	0.9	-	<0.05	-	-
		5-28-87; 2 hr	-	-	-	-	0.18	0.18	0.19	-	<0.05	-	-
		5-28-87; 3 hr	-	-	-	-	0.15	0.16	0.14	-	<0.05	-	-
		6-3-87; 0 hr	-	-	-	-	0.05	0.03	0.09	-	<0.05	-	-
		6-3-87; 0.5 hr	-	-	-	-	0.31	0.19	0.59	-	<0.05	-	-
		6-3-87; 1 hr	-	-	-	-	0.2	0.15	0.24	-	<0.05	-	-
		6-8-87; 0 hr	-	-	-	-	0.1	0.03	0.12	-	<0.05	-	-
		6-8-87; 0.5 hr	-	-	-	-	0.08	0.02	0.05	-	<0.05	-	-
		6-8-87; 1 hr	-	-	-	-	0.07	0.03	0.06	-	<0.05	-	-
EDIHI85	C10	6-7-85	0.02	<0.002	<0.002	0.16	0.04	0.04	0.12	-	-	-	-
OBGSOA87		5-22-87; 0 hr	-	-	-	-	0.22	0.13	0.21	<0.05	-	-	-
		5-22-87; 0.5 hr	-	-	-	-	0.13	0.1	0.15	<0.05	-	-	-
		5-22-87; 1 hr	-	-	-	-	0.1	0.07	0.11	<0.05	-	-	-
		5-28-87; 0 hr	-	-	-	-	0.33	0.23	0.31	-	<0.05	-	-
		5-28-87; 0.5 hr	-	-	-	-	0.19	0.25	0.2	-	<0.05	-	-
		5-28-87; 1 hr	-	-	-	-	0.07	0.29	0.09	-	<0.05	-	-
		5-28-87; 2 hr	-	-	-	-	0.08	0.05	0.07	-	<0.05	-	-
		5-28-87; 3 hr	-	-	-	-	-	-	-	-	-	-	-

Table 3-16. *Storm Sewer Data S\ummary.*

Investigation	Sample Location	Date	Chromium (mg/l)	Arsenic (mg/l)	Selenium (mg/l)	Antimony (mg/l)	Lead (mg/l)	Copper (mg/l)	Zinc (mg/l)	Total Cyanide (mg/l)	Free Cyanide (mg/l)	TSS (mg/l)	pH (S.U.)
		6-3-87; 0 hr	-	-	-	-	0.27	0.27	0.72	-	<0.05	-	-
		6-3-87; 0.5 hr	-	-	-	-	0.17	0.16	0.28	-	<0.05	-	-
		6-3-87; 1 hr	-	-	-	-	0.1	0.13	0.13	-	<0.05	-	-
		6-8-87; 0 hr	-	-	-	-	0.1	0.06	0.12	-	<0.05	-	-
		6-8-87; 0.5 hr	-	-	-	-	0.1	0.04	0.05	-	<0.05	-	-
		6-8-87; 1 hr	-	-	-	-	0.12	0.03	0.06	-	<0.05	-	-

Table 3-17. *Outfall 003 Water and Sediment Data - 1992 RI.*

Sample	pH	Specific Conductance (μmhos)	Temperature (°F)	Concentration (ug/l)						
				Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260
Outfall Water 8/13/92 14:30	6.93	1,168	64	0.5 U	1.0 U	0.5 U	0.5 U	1.2 JN	0.5 U	0.5 U
Outfall Water 8/13/92 14:30 Blind Duplicate				0.5 U	1.0 U	0.5 U	0.5 U	1.8 J	0.5 U	0.5 U
Outfall Water 8/13/92 15:00	6.98	1,106	62.5	0.5 U	1.0 U	0.5 U	0.5 U	1.8	0.5 U	0.5 U
Outfall Water 8/13/92 15:30	7.47	477	62.4	0.5 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Outfall Water 8/13/92 16:30	7.22	345	61.3	0.5 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Outfall Sediment				0.043 mg/kg U	0.086 mg/kg U	0.043 mg/kg U	0.043 mg/kg U	0.18 mg/kg	0.043 mg/kg U	0.043 mg/kg U
Equipment Blank	7.11	23	65.5	0.5 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

U Not detected at the indicated quantitation limit.
J Detected results are estimated.
JN Detected results are presumptively present at an approximated quantity.

RACER0060694

Table 3-18. *1996 NYSDEC Sampling VOC Surface Water Data (detected constituents).*

Constituent	NYSDEC AWQS Class C	L21	L23
1,2-Dichloroethene (total)	-	**1 J**	**2 J**

Notes:
Concentrations in ug/l.
AWQS Ambient water quality standard.

Table 3-19. *1996 NYSDEC Sampling SVOC Surface Water Data (detected constituents)*

Constituent	NYSDEC AWQS Class C	L21	L23
bis(2-Ethylhexyl)phthalate	0.6	10 U	**1 J**
TICs			
unknown		-	**2 J**

Notes:
Concentrations in ug/l.
AWQS Ambient water quality standard.

Table 3-20. *1996 NYSDEC Sampling - Inorganic Surface Water Data (detected constituents)*

Constituent	NYSDEC AWQS Class C	L21		L23	
Aluminum	100	264	*	166	B
Antimony	-	0.7	U	2.7	U
Arsenic	190	1.5	U	1.5	U
Barium	-	81.9	B	88.7	B
Beryllium	*	0.2	U	0.2	U
Cadmium	**	0.2	U	0.2	B
Calcium	-	166000		196000	
Chromium	**	1.6	B	2.8	B
Cobalt	5	1.4	U	1.4	U
Copper	**	9.8	B	6.7	B
Iron	300	582		595	
Lead	**	3.6		2.7	B
Magnesium	-	25700		29200	
Manganese	-	129		139	
Mercury	0.2***	0.1	U	0.1	U
Nickel	**	5.6	B	7.2	B
Potassium	-	9380	E	9760	E
Selenium	1	1.4	U	1.4	U
Silver	0.1	0.4	U	1.2	B
Sodium	-	263000		271000	B
Thallium	8	2.5	B	1.9	U
Vanadium	14	1.6	U	1.6	U
Zinc	30	41.2		37.9	
Cyanide	5.2	10	U	10	U

Notes:
Concentrations in ug/l.
WQS Ambient water quality standard.
11 ug/L when hardness is less than or equal to 75ppm; 1,100 ug/L when hardness is greater than 75 ppm.
** Hardness dependent.
*** Guidance value.

Table 3-21. *1996 NYSDEC sampling - PCB sediment data (detected constituents).*

Constituent	L1		L2		L3		L4		L5		L6		L7		L8		L9A		L10B		L11B		L12C		L-13	
Aroclor 1016	60	X	56	U	84	X	46	X	73	X	64	X	40	X	51	X	50	X	46	X	41	X	38	X	42	U
Aroclor 1242	260		56	U	38	JP	32	J	4100	D	6300	D	25000	D	19	J	630		720		21	J	520		42	U
Aroclor 1254	360	JP	56	U	84	U	84	J	1800	DPJ	2100	DPJ	2000	JD	19	J	470	J	560	J	41	U	590	JP	20	J
Aroclor 1260	76	P	56	U	84	U	30	J	580		640		780	JD	35	J	130		280		41	U	95		19	J
Sum of detected Aroclors	756				122		192		6553		9104		27820		124		1280		1606		62		1243		39	

Notes:
Concentrations in ug/kg.
NYSDEC sediment criteria for PCBs
(based on average TOC concentration):
0.0321 for human health bioaccumulation
110,639 for benthic aquatic life acute toxicity
773.45 for benthic aquatic life chronic toxicity
56.11 for wildlife bioaccumulation
D - Analyzed at a secondary dilution factor.
J - Estimated value.
P - > 25% difference between both GC columns.
U - Compound analyzed but not detected.
X - AR1016 potentially present, in AR1242 result.

RACER0060698

Table 3-21. *1996 NYSDEC sampling - PCB sediment data (detected constituents).*

Constituent	L14		L15		L16		L17		L18		L19		L20		L22		L24		L25		L26		L27		L28	
Aroclor 1016	44	U	40	U	40	U	43	U	40	U	45	UX	44	UX	56	X	49	X	61	X	52	X	50	U	50	U
Aroclor 1242	44	U	40	U	40	U	43	U	40	U	72	P	71		1900	D	97		98		66		50	U	50	U
Aroclor 1254	44	U	40	U	40	U	43	U	40	U	230		220		2000	D	180		180		96		100	J	13	JP
Aroclor 1260	44	U	40	U	40	U	43	U	16	J	100		120		860	J	37	J	83		41	J	38	J	12	J
Sum of detected Aroclors									16		402		411		4816		363		422		255		138		25	

Notes:
Concentrations in ug/kg.
NYSDEC sediment criteria for PCBs
(based on average TOC concentration):
0.0321 for human health bioaccumulation
110,639 for benthic aquatic life acute toxicity
773.45 for benthic aquatic life chronic toxicity
56.11 for wildlife bioaccumulation
D - Analyzed at a secondary dilution factor.
J - Estimated value.
P - > 25% difference between both GC columns.
U - Compound analyzed but not detected.
X - AR1016 potentially present, in AR1242 result.

RACER0060699

Table 3-22. *1996 NYSDEC Sampling - VOC Sediment Data (detected constituents).*

Constituent	NYSDEC Sediment Criteria (1)	(2)	(3)	(4)	L1		L2RE		L3		L4		L5		L6		L7RE		L8		L9A	
1,2-Dichloroethene (total)	-	-	-	-	20	U	19	U	25	U	14	U	22	U	17	U	12	U	16	U	15	U
2-Butanone	-	-	-	-	20	U	19	U	25	U	14	U	85		65		11	J	16	U	15	U
Acetone	-	-	-	-	37		19	U	25	U	41		300		190		44		16	U	19	
Carbon Disulfide	-	-	-	-	10	J	19	U	25		14	U	10	J	13	J	12	U	9	J	7	J
Chlorobenzene	-	1386.60	140.26	-	20	U	19	U	25	U	14	U	22	U	17	U	12	U	16	U	15	U
Ethylbenzene	-	-	-	-	20	U	19	U	6	J	14	U	22	U	17	U	12	U	16	U	15	U
Methylene Chloride	-	-	-	-	4	JB	4	J	7	JB	3	JB	5	JB	4	JB	2	J	5	JB	4	JB
Tetrachloroethene	32.06	-	-	-	20	U	19	U	25	U	14	U	22	U	17	U	12	U	16	U	15	U
Toluene	-	-	-	-	20	U	19	U	25	U	14	U	22	U	17	U	12	U	16	U	15	U
Trichloroethene	80.15	-	-	-	20	U	19	U	25	U	14	U	22	U	17	U	12	U	16	U	15	U
Vinyl Chloride	2.81	-	-	-	20	U	19	U	25	U	14	U	22	U	17	U	12	U	16	U	15	U
Xylene (total)	-	-	-	-	20	U	19	U	42		6	J	22	U	17	U	12	U	16	U	15	U
Total Detected VOCs					51		4		80		50		400		272		57		14		30	
TICs																						
Acenapthene (carryover)	-	-	-	-	-		-		-		32	JN	-		-		-		-		-	
Benzo[b]thiophene	-	-	-	-	-		-		-		8	JN	-		-		-		-		-	
Cyclotetrasiloxane, octamethyl-	-	-	-	-	-		-		-		-		71	JN	48	JN	7	JN	-		9	JN
Methyl-benzothiophene	-	-	-	-	-		-		-		8	J	-		-		-		-		-	
Methyl-napthalene isomer (carryover)	-	-	-	-	-		-		-		490	J	140	J	-		-		10	JN	-	
tetramethyl-cyclohexane isomer(s)	-	-	-	-	-		-		-		-		-		-		-		-		-	
unknown alkane(s)	-	-	-	-	-		-		-		-		39	J	66	J	17	J	-		-	
unknown cyclic	-	-	-	-	-		-		-		-		-		-		-		-		-	
unknown hydrocarbon	-	-	-	-	-		-		-		-		-		-		-		-		-	
unknown(s)	-	-	-	-	91	J	-		-		-		-		-		-		12	J	10	J
Tetrahydro-naphthalene isomer	-	-	-	-	28	J	-		-		-		-		-		-		-		-	

Notes:
NYSDEC sediment criterion calculated based on average TOC concentration.
(1) Human health bioaccumulation criterion
(2) Benthic aquatic life acute toxicity criterion
(3) Benthic aquatic life chronic toxicity criterion
(4) Wildlife bioaccumulation criterion
Concentrations in ug/kg.
B - Also identified in associated blank.
J - Estimated value.
JN - Presumptive present at an approximate quantity.
U - Compound analyzed but not detected.

RACER0060700

Table 3-22. *1996 NYSDEC Sampling - VOC Sediment Data (detected constituents).*

Constituent	NYSDEC Sediment Criteria (1)	(2)	(3)	(4)	L10B		L11B		L12CRE		L13C		L14		L15		L16		L17		L18	
1,2-Dichloroethene (total)	-	-	-	-	14	U	13	U	12	U	13	U	13	U	12	U	12	U	13		12	U
2-Butanone	-	-	-	-	14	U	13	U	12	U	13	U	13	U	2	JB	8	JB	13	U	12	U
Acetone	-	-	-	-	21		13	U	12	U	13	U	5	JB	4	JB	63	B	3	JB	2	JB
Carbon Disulfide	-	-	-	-	14	U	3	J	12	U	8	J	13	U	3	J	3	J	13	U	2	J
Chlorobenzene	-	1386.60	140.26	-	14	U	13	U	12	U	13	U	13	U	12	U	12	U	2	J	12	U
Ethylbenzene	-	-	-	-	14	U	13	U	12	U	13	U	13	U	12	U	12	U	13	U	12	U
Methylene Chloride	-	-	-	-	3	JB	4	JB	2	J	3	JB	2	JB	2	JB	2	JB	2	JB	2	JB
Tetrachloroethene	32.06	-	-	-	14	U	13	U	12	U	13	U	13	U	12	U	12	U	13	U	12	U
Toluene	-	-	-	-	14	U	13	U	12	U	13	U	13	U	12	U	12	U	2	J	12	U
Trichloroethene	80.15	-	-	-	14	U	13	U	12	U	13	U	13	U	12	U	12	U	11	J	12	U
Vinyl Chloride	2.81	-	-	-	14	U	13	U	12	U	13	U	13	U	12	U	12	U	13	U	12	U
Xylene (total)	-	-	-	-	14	U	4	J	12	U	13	U	13	U	12	U	12	U	13	U	12	U
Total Detected VOCs					24		11		2		11		7		11		76		33		6	
TICs																						
Acenapthene (carryover)	-	-	-	-	-		-		-		-		-		-		-		-		-	
Benzo[b]thiophene	-	-	-	-	-		-		-		-		-		-		-		-		-	
Cyclotetrasiloxane, octamethyl-	-	-	-	-	-		-		-		-		-		-		-		-		-	
Methyl-benzothiophene	-	-	-	-	-		-		-		-		-		-		-		-		-	
Methyl-napthalene isomer (carryover)	-	-	-	-	48	J	10	J	-		-		-		-		-		-		-	
tetramethyl-cyclohexane isomer(s)	-	-	-	-	-		-		-		-		-		-		-		-		-	
unknown alkane(s)	-	-	-	-	-		-		-		-		-		-		-		-		-	
unknown cyclic	-	-	-	-	-		-		-		-		-		-		-		-		-	
unknown hydrocarbon	-	-	-	-	-		-		-		-		-		7	J	-		-		-	
unknown(s)	-	-	-	-	-		-		-		-		-		-		-		-		-	
Tetrahydro-naphthalene isomer	-	-	-	-	-		-		-		-		-		-		-		-		-	

Notes:
NYSDEC sediment criterion calculated based on average TOC concentration.
(1) Human health bioaccumulation criterion
(2) Benthic aquatic life acute toxicity criterion
(3) Benthic aquatic life chronic toxicity criterion
(4) Wildlife bioaccumulation criterion
Concentrations in ug/kg.
B - Also identified in associated blank.
J - Estimated value.
JN - Presumptive present at an approximate quantity.
U - Compound analyzed but not detected.

RACER0060701

Table 3-22. *1996 NYSDEC Sampling - VOC Sediment Data (detected constituents).*

Constituent	NYSDEC Sediment Criteria (1)	(2)	(3)	(4)	L19		L20		L22		L24		L25		L26		L27RE		L28	
1,2-Dichloroethene (total)	-	-	-	-	4	J	2	J	17	U	15	U	18	U	14	U	15	U	15	U
2-Butanone	-	-	-	-	14	U	13	U	17	U	15	U	18	U	14	U	12	J	2	JB
Acetone	-	-	-	-	2	JB	2	JB	33		15	U	37		14	U	37		17	B
Carbon Disulfide	-	-	-	-	14	U	13	U	9	J	15	U	18	U	2	J	11	J	15	U
Chlorobenzene	-	1386.60	140.26	-	14	U	13	U	17	U	15	U	18	U	14	U	15	U	3	J
Ethylbenzene	-	-	-	-	14	U	13	U	17	U	15	U	18	U	14	U	15	U	15	U
Methylene Chloride	-	-	-	-	6	JB	3	JB	3	JB	5	JB	3	JB	4	JB	15	U	4	JB
Tetrachloroethene	32.06	-	-	-	2	J	13	U	17	U	3	J	18	U	14	U	15	U	15	U
Toluene	-	-	-	-	14	U	27		17	U	15	U	18	U	14	U	15	U	15	U
Trichloroethene	80.15	-	-	-	2	J	2	J	17	U	15	U	18	U	14	U	15	U	15	U
Vinyl Chloride	2.81	-	-	-	2	J	13	U	17	U	15	U	18	U	14	U	15	U	15	U
Xylene (total)	-	-	-	-	14	U	13	U	17	U	15	U	18	U	14	U	15	U	15	U
Total Detected VOCs					18		36		45		8		40		6		60		26	
TICs																				
Acenapthene (carryover)	-	-	-	-	-		-		-		-		-		-		-		-	
Benzo[b]thiophene	-	-	-	-	-		-		-		-		-		-		-		-	
Cyclotetrasiloxane, octamethyl-	-	-	-	-	-		-		27	JN	-		10	JN	58	JN	-		-	
Methyl-benzothiophene	-	-	-	-	-		-		-		-		-		-		-		-	
Methyl-napthalene isomer (carryover)	-	-	-	-	-		-		-		-		-		-		-		-	
tetramethyl-cyclohexane isomer(s)	-	-	-	-	-		-		30	J	-		-		-		60	J	-	
unknown alkane(s)	-	-	-	-	-		-		280	J	-		11	J	-		96	J	-	
unknown cyclic	-	-	-	-	-		-		14	J	-		-		-		52	J	-	
unknown hydrocarbon	-	-	-	-	-		-		-		-		-		-		-		-	
unknown(s)	-	-	-	-	-		-		21	J	-		19	J	-		101	J	-	
Tetrahydro-naphthalene isomer	-	-	-	-	-		-		-		-		-		-		-		-	

Notes:
NYSDEC sediment criterion calculated based on average TOC concentration.
(1) Human health bioaccumulation criterion
(2) Benthic aquatic life acute toxicity criterion
(3) Benthic aquatic life chronic toxicity criterion
(4) Wildlife bioaccumulation criterion
Concentrations in ug/kg.
B - Also identified in associated blank.
J - Estimated value.
JN - Presumptive present at an approximate quantity.
U - Compound analyzed but not detected.

RACER0060702

Table 3-23. *1996 NYSDEC sampling - SVOC sediment data (detected constituents).*

Constituent	NYSDEC Sediment Criteria (1)	(2)	(3)	(4)	L1		L2		L3		L4		L5		L6		L7		L8		L-10B		L-11B		L-12C	
1,2-Dichlorobenzene	-	4809	480.90	-	3100	U	560	U	840	U	470	U	3700	U	3200	U	400	U	510	U	460	U	420	U	1900	U
1,4-Dichlorobenzene	-	4809	480.90	-	3100	U	560	U	840	U	470	U	3700	U	3200	U	46	J	510	U	460	U	420	U	1900	U
2,4-Dimethylphenol	-	-	*	-	3100	U	560	U	840	U	470	U	3700	U	3200	U	400	U	510	U	460	U	420	U	1900	U
2-Methylnapthalene	-	-	-	-	3100	U	560	U	840	U	470	U	3700	U	3200	U	67	J	510	U	66	J	420	U	1900	U
4-Methylphenol	-	-	*	-	3100	U	560	U	840	U	470	U	3700	U	3200	U	43	J	510	U	460	U	420	U	1900	U
Acenapthene	-	-	5610.50	-	3100	U	560	U	840	U	470	U	3700	U	400	JD	130	J	510	U	200	J	420	U	1900	U
Acenapthylene	-	-	-	-	550	JD	560	U	840	U	470	U	450	JD	540	JD	190	J	150	J	120	J	420	U	1900	U
Anthracene	-	-	-	-	1100	JD	560	U	840	U	79	J	1000	JD	1400	JD	410		140	J	450	J	420	U	720	JD
Benzo[a]anthracene	52.10	-	-	-	3700	D	560	U	95	J	250	J	3800	D	4100	D	1300		610		1200		59	J	3200	D
Benzo[a]pyrene	52.10	-	-	-	3600	D	560	U	840	U	250	J	3900	D	3900	D	1300		600		1100		45	J	2800	D
Benzo[b]fluoranthene	52.10	-	-	-	3200	D	560	U	840	U	280	J	4700	D	4200	D	1600		520		1200		420	U	2400	D
Benzo[g,h,i]perylene	-	-	-	-	2400	JD	560	U	840	U	160	J	2600	JD	2300	JD	900		420	J	700		420	U	1800	JD
Benzo[k]fluoranthene	52.10	-	-	-	2500	JD	560	U	840	U	240	J	3500	JD	3600	D	1300		620		850		55	J	2600	D
bis(2-Ethylhexyl)phthalate	-	-	7994.96	-	500	JD	560	U	840	U	100	J	2700	JD	2700	JD	570		510	U	370	J	45	J	1900	U
Butylbenzylphthalate	-	-	-	-	3100	U	560	U	840	U	470	U	3700	U	3200	U	400	U	510	U	460	U	420	U	1900	U
Carbazole	-	-	-	-	3100	U	560	U	840	U	470	U	490	JD	510	JD	180	J	58	J	250	J	420	U	770	JD
Chrysene	52.10	-	-	-	3200	D	560	U	840	U	330	J	5300	D	5000	D	1700		640		1400		62	J	3300	D
Di-n-octylphthalate	-	-	-	-	3100	U	560	U	840	U	470	U	3700	U	3200	U	400	U	510	U	460	U	420	U	1900	U
Dibenzofuran	-	-	-	-	3100	U	560	U	840	U	470	U	3700	U	3200	U	74	J	510	U	120	J	420	U	1900	U
Dibenz[a,h]anthracene	-	-	-	-	3100	U	560	U	840	U	470	U	3700	U	3200	U	400	U	93	J	460	U	420	U	1900	U
Fluoranthene	-	-	40876.50	-	7200	D	560	U	110	J	570		8400	D	8500	D	2200		890		2000		140	J	6700	D
Fluorene	-	-	-	-	440	JD	560	U	840	U	63	J	540	JD	760	JD	210	J	67	J	240	J	420	U	1900	U
Indeno[1,2,3-cd]pyrene	52.10	-	-	-	2400	JD	560	U	840	U	170	J	2700	JD	2400	JD	920		400	J	750		420	U	1900	JD
Napthalene	-	-	-	-	320	JD	560	U	840	U	53	J	3700	U	3200	U	91	J	510	U	100	J	420	U	1900	U
Phenanthrene	-	-	4809.00	-	3900	D	560	U	840	U	290	J	4200	D	5500	D	1200		360	J	1600		130	J	3000	D
Pyrene	-	-	-	-	6900	D	560	U	94	J	540		8200	D	8300	D	2700		1300		2300		130	J	5800	D
Total Detected SVOCs					41910				299		3375		52480		54110		17131		6868		15016		666		34990	
TICs																										
2,7-Octanedione	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
2-Pentanone, 4-hydroxy-4-methyl	-	-	-	-	34000	JNDAB	14000	JN	22000	JN	-		41000	JNDAB	36000	JNDAB	-		-		-		14000	JNAB	18000	JNDAB
3-Penten-2-one, 4-methyl	-	-	-	-	-		-		-		-		-		-		-		-		-		600	JNAB	-	
9,10-Anthraceneidone	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
Acetic acid, 1,1-dimethylethyl est.	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
dichloro biphenyl isomer(s)	-	-	-	-	-		-		-		-		-		-		790	J	-		-		-		-	
dimethyl phenanthrene isomer	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
Hexadecanoic acid	-	-	-	-	-		-		-		-		3500	JND	-		-		-		-		-		-	
methyl anthracene isomer	-	-	-	-	-		-		-		-		-		-		-		-		410	J	-		-	
trichloro biphenyl isomer(s)	-	-	-	-	-		-		-		-		-		-		730	J	-		-		-		-	
unknown alkane(s)	-	-	-	-	3000	JDB	3190	J	9200	J	3300	JB	4700	JDB	1100	JD	1620	JB	1800	JB	1100	JB	2500	JB	-	
unknown alkene(s)	-	-	-	-	-		680	J	-		-		-		-		-		-		-		-		-	
unknown ketone(s)	-	-	-	-	-		1890	J	-		730	J	-		-		-		-		-		-		-	
unknown phenolic	-	-	-	-	-		-		1000	J	-		-		-		-		-		-		-		-	
unknown PNA	-	-	-	-	3900	JD	-		-		-		2200	JD	4900	JD	-		-		-		-		3350	JD
unknown(s)	-	-	-	-	-		-		1600	J	12680	JB	4000	JD	4400	JD	8900	JB	10670	JB	12780	JB	1400	JB	460	JD
Vitamin E	-	-	-	-	-		-		-		-		4200	JND	-		-		-		-		-		-	

Notes:
NYSDEC sediment criterion calculated based on average TOC concentration.
(1) Human health bioaccumulation criterion
(2) Benthic aquatic life acute toxicity criterion
(3) Benthic aquatic life chronic toxicity criterion
(4) Wildlife bioaccumulation criterion
* total unchlorinated phenols 20.04 ug/kg.
Concentrations in ug/kg.
A - TIC is a suspected aldol-condensation product.
B - Also identified in associated blank.
D - Analyzed at a secondary dilution factor.
J - Estimated value.
JN - Presumptive present at an approximate quantity.
N - Presumptive evidence of a compound.

Table 3-23. *1996 NYSDEC sampling - SVOC sediment data (detected constituents).*

Constituent	NYSDEC Sediment Criteria (1)	(2)	(3)	(4)	L-13		L-14		L-15		L-16		L-17		L-18		L-19		L-20		L-22		L-24		L-25	
1,2-Dichlorobenzene	-	4809	480.90	-	430	U	440	U	400	U	410	U	430	U	410	U	450	U	450	U	58	J	490	U	620	U
1,4-Dichlorobenzene	-	4809	480.90	-	430	U	440	U	400	U	410	U	430	U	410	U	450	U	450	U	570	U	490	U	620	U
2,4-Dimethylphenol	-	-	*	-	430	U	440	U	400	U	410	U	430	U	410	U	450	U	48	J	570	U	490	U	620	U
2-Methylnapthalene	-	-	-	-	430	U	440	U	400	U	410	U	430	U	410	U	450	J	1200		440	J	50	J	220	J
4-Methylphenol	-	-	*	-	430	U	440	U	400	U	410	U	430	U	410	U	120	J	340	J	180	J	490	U	120	J
Acenapthene	-	-	5810.50	-	60	J	440	U	400	U	410	U	430	U	410	U	1400		2300		930		110	J	520	J
Acenapthylene	-	-	-	-	58	J	440	U	400	U	410	U	430	U	410	U	370	J	370	J	600		120	J	650	
Anthracene	-	-	-	-	180	J	440	U	50	J	410	U	430	U	410	U	2200		3500		1800		310	J	1900	
Benzo[a]anthracene	52.10	-	-	-	540		440	U	150	J	410	U	430	U	410	U	6600	D	3300	D	3800	D	990		7700	D
Benzo[a]pyrene	52.10	-	-	-	510		440	U	140	J	46	J	430	U	410	U	3500		2800	D	4000	D	520		7600	D
Benzo[b]fluoranthene	52.10	-	-	-	400	J	440	U	130	J	69	J	430	U	410	U	5300	D	2500	D	3600	D	820		8100	D
Benzo[g,h,i]perylene	-	-	-	-	300	J	440	U	110	J	56	J	430	U	410	U	2800		2800		1800		960		2200	
Benzo[k]fluoranthene	52.10	-	-	-	510		440	U	130	J	52	J	430	U	410	U	450	U	450	U	4800	D	970		7200	D
bis(2-Ethylhexyl)phthalate	-	-	7994.98	-	130	J	57	J	400	U	57	J	430	U	410	U	2300		1300		1300		510		1700	
Butylbenzylphthalate	-	-	-	-	430	U	440	U	400	U	410	U	430	U	410	U	450	U	450	U	570	U	150	J	620	U
Carbazole	-	-	-	-	82	J	440	U	400	U	410	U	430	U	410	U	1600		1200	JD	870		190	J	810	
Chrysene	52.10	-	-	-	620		440	U	170	J	58	J	430	U	410	U	7500	D	3700	D	4300	D	1100		9100	D
Di-n-octylphthalate	-	-	-	-	430	U	440	U	400	U	410	U	430	U	410	U	450	U	450	U	570	U	490	U	620	U
Dibenzofuran	-	-	-	-	430	U	440	U	400	U	410	U	430	U	410	U	1200		2500		830		78	J	410	J
Dibenz[a,h]anthracene	-	-	-	-	430	U	440	U	400	U	410	U	430	U	410	U	450	U	450	U	570	U	490	U	620	U
Fluoranthene	-	-	40876.50	-	970		79	J	370	J	96	J	430	U	41	J	15000	D	7900	D	8600	D	1900		14000	D
Fluorene	-	-	-	-	65	J	440	U	400	U	410	U	430	U	410	U	1500		2400		1100		170	J	870	
Indeno[1,2,3-cd]pyrene	52.10	-	-	-	320	J	440	U	100	J	49	J	430	U	410	U	3000		3200		480	J	870		490	J
Napthalene	-	-	-	-	430	U	440	U	400	U	410	U	430	U	410	U	890		2100		780		54	J	290	J
Phenanthrene	-	-	4809.00	-	700		440	U	220	J	410	U	430	U	410	U	12000	D	7800	D	940	JD	1300		8400	D
Pyrene	-	-	-	-	920		77	J	320	J	99	J	430	U	410	U	13000	D	6700	D	8400	D	2000		14000	D
Total Detected SVOCs					6385		213		1890		582				41		80730		57958		49808		13172		84280	
TICs																										
2,7-Octanedione	-	-	-	-	490	JN	-		-		-		-		-		-		-		-		-		-	
2-Pentanone, 4-hydroxy-4-methyl	-	-	-	-	-		19000	NA	12000	NA	13000	NA	10000	JNAB	11000	JNAB	910	NA	890	NA	7800	NA	7700	JNAB	8900	JNAB
3-Penten-2-one, 4-methyl	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
9,10-Anthraceneidone	-	-	-	-	-		-		-		-		-		-		280	JN	120	JN	-		-		-	
Acetic acid, 1,1-dimethylethyl est.	-	-	-	-	8100	JNAB	-		-		-		-		-		-		-		-		-		-	
dichloro biphenyl isomer(s)	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
dimethyl phenanthrene isomer	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
Hexadecanoic acid	-	-	-	-	-		-		920	JN	-		420	JN	-		-		-		-		-		-	
methyl anthracene isomer	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
trichloro biphenyl isomer(s)	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
unknown alkane(s)	-	-	-	-	1600	JB	4300	JB	2300	JB	3140	JB	1830	JB	1760	JB	-		-		5360	JB	1410	JB	1240	J
unknown alkene(s)	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
unknown ketone(s)	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
unknown phenolic	-	-	-	-	-		-		-		-		-		-		-		-		-		-		-	
unknown PNA	-	-	-	-	-		-		-		-		-		-		1980	J	1980	J	1270	J	-		2610	J
unknown(s)	-	-	-	-	570	J	2190	JB	810	J	1540	J	1610	J	1480	JB	-		-		1100	J	-		880	J
Vitamin E	-	-	-	-	-		-		-		-		-		-		-		-		-		-		1000	JN

Notes:
NYSDEC sediment criterion calculated based on average TOC concentration.
(1) Human health bioaccumulation criterion
(2) Benthic aquatic life acute toxicity criterion
(3) Benthic aquatic life chronic toxicity criterion
(4) Wildlife bioaccumulation criterion
* total unchlorinated phenols 20.04 ug/kg.
Concentrations in ug/kg.
A - TIC is a suspected aldol-condensation product.
B - Also identified in associated blank.
D - Analyzed at a secondary dilution factor.
J - Estimated value.
JN - Presumptive present at an approximate quantity.
N - Presumptive evidence of a compound.

RACER0060704

Table 3-23. *1996 NYSDEC sampling - SVOC sediment data (detected constituents).*

Constituent	NYSDEC Sediment Criteria (1)	(2)	(3)	(4)	L-26		L-27		L-28	
1,2-Dichlorobenzene	-	4809	480.90	-	120	J	510	U	510	U
1,4-Dichlorobenzene	-	4809	480.90	-	530	U	510	U	510	U
2,4-Dimethylphenol	-	-	*	-	530	U	510	U	510	U
2-Methylnapthalene	-	-	-	-	270	J	440	J	510	U
4-Methylphenol	-	-	*	-	71	J	130	J	510	U
Acenapthene	-	-	5610.50	-	1000		2200		510	U
Acenapthylene	-	-	-	-	740		1500		510	U
Anthracene	-	-	-	-	2800		7600	JD	510	U
Benzo[a]anthracene	52.10	-	-	-	12000	D	22000	D	61	J
Benzo[a]pyrene	52.10	-	-	-	12000	D	20000	D	54	J
Benzo[b]fluoranthene	52.10	-	-	-	11000	D	17000	D	110	J
Benzo[g,h,i]perylene	-	-	-	-	2300		2900		510	U
Benzo[k]fluoranthene	52.10	-	-	-	9100	D	510	U	80	J
bis(2-Ethylhexyl)phthalate	-	-	7994.96	-	12000	D	3300		360	J
Butylbenzylphthalate	-	-	-	-	530	U	34000	D	510	U
Carbazole	-	-	-	-	1200		510	U	510	U
Chrysene	52.10	-	-	-	14000	D	22000	D	97	J
Di-n-octylphthalate	-	-	-	-	530	U	510	U	110	J
Dibenzofuran	-	-	-	-	730		1200		510	U
Dibenz[a,h]anthracene	-	-	-	-	530	U	510	U	510	U
Fluoranthene	-	-	40876.50	-	23000	D	45000	D	190	J
Fluorene	-	-	-	-	1500		2700		510	U
Indeno[1,2,3-cd]pyrene	52.10	-	-	-	500	J	700		510	U
Napthalene	-	-	-	-	420	J	550		510	U
Phenanthrene	-	-	4809.00	-	16000	D	29000	D	120	J
Pyrene	-	-	-	-	23000	D	40000	D	150	J
Total Detected SVOCs					********		252220		1332	
TICs										
2,7-Octanedione	-	-	-	-	-		-		-	
2-Pentanone, 4-hydroxy-4-methyl	-	-	-	-	7600	JNAB	1000	NA	15000	NAB
3-Penten-2-one, 4-methyl	-	-	-	-	-		-		650	NAB
9,10-Anthraceneidone	-	-	-	-	-		-		-	
Acetic acid, 1,1-dimethylethyl est.	-	-	-	-	-		-		-	
dichloro biphenyl isomer(s)	-	-	-	-	-		-		-	
dimethyl phenanthrene isomer	-	-	-	-	180	J	-		-	
Hexadecanoic acid	-	-	-	-	-		-		-	
methyl anthracene isomer	-	-	-	-	-		-		-	
trichloro biphenyl isomer(s)	-	-	-	-	-		-		-	
unknown alkane(s)	-	-	-	-	-		340	J	3090	JB
unknown alkene(s)	-	-	-	-	-		-		-	
unknown ketone(s)	-	-	-	-	-		-		-	
unknown phenolic	-	-	-	-	-		-		-	
unknown PNA	-	-	-	-	3070	J	1580	J	-	
unknown(s)	-	-	-	-	1200	J	1100	J	1960	J
Vitamin E	-	-	-	-	-		-		-	

Notes:
NYSDEC sediment criterion calculated based on average TOC concentration.
(1) Human health bioaccumulation criterion
(2) Benthic aquatic life acute toxicity criterion
(3) Benthic aquatic life chronic toxicity criterion
(4) Wildlife bioaccumulation criterion
*total unchlorinated phenols 20.04 ug/kg.
Concentrations in ug/kg.
A - TIC is a suspected aldol-condensation product.
B - Also identified in associated blank.
D - Analyzed at a secondary dilution factor.
J - Estimated value.
JN - Presumptive present at an approximate quantity.
N - Presumptive evidence of a compound.

Table 3-24. *1996 NYSDEC sampling - inorganic sediment data (detected constituents).*

Constituent	NYSDEC Sediment Criteria (1)	(2)	Background NYS Soil Concs. (3)	L1		L2		L3		L4		L5		L6		L7		L8		L9A		L10B	
Aluminum	-	-	1000 - 25000	2700	*	2160	*	10400		5590	*	8660	*	5340	*	3810	*	9150	*	5510	*	4390	
Antimony	2	25	-	0.99	UN	0.92	U	3.5	BN	0.76	UN	1.3	BN	1.5	BN	1.2	BN	0.83	UN	0.81	UN	0.75	UN
Arsenic	6	33	3 - 12	1.7	B	0.51	U	11.1		4.4		6.1		5.5		3.2		5.2		3.3		7.6	
Barium	-	-	15 - 600	90.4		85.3		137		75.8		101		92.6		59.7		47.1	B	62.1		54.7	B
Beryllium	-	-	ND - 1.75	0.26	B	0.14	B	0.51	B	0.36	B	0.49	B	0.37	B	0.26	B	0.49	B	0.33	B	0.31	B
Cadmium	0.6	9	0.21	5.7		0.08	B	0.1	B	5.4		2.3		2.4		1.7		0.39	B	1.1	B	0.83	B
Calcium	-	-	130 - 35000	204000		231000		8100		42100		62100		58300		30200		11200		40300		35100	
Chromium	26	110	1.5 - 40	51.6		3.3	B	17.9		27.5		83.8		146		113		16.7		30		20.8	
Cobalt	-	-	2.5 - 60	2.3	B	1.4	B	9.4	B	5.2	B	7.4	B	6.8	B	4	B	7.8	B	4.8	B	5.4	B
Copper	16	110	13	53.4	N*	3.1	BN*	12.9	N*	28.5	N*	114	N*	128	N*	71.5	N*	28.3	N*	50.3	N*	37.4	N*
Iron	20000	40000	17500 - 25000	8350	*	5860	*	23000	*	11900	*	17000	*	14400	*	8930	*	18700		11400	*	11500	*
Lead	31	110	17	44.3		0.94	B	7.8		24.5		128		122		83.9		29.1		67.1		59	
Magnesium	-	-	2500 - 6000	4560		5670		5000		13700		14800		11400		6840		5100		9320		11000	
Manganese	460	1100	50 - 5000	351		428		186		382		303		267		169		180		219		277	
Mercury	0.15	1.3	0.042 - 0.066	0.17	N	0.07	UN	0.13	UN	0.1	BN	0.15	BN	0.2	N	0.12	N	0.11	BN	0.09	BN	0.07	BN
Nickel	16	50	0.5 - 25	9.8	B	3.8	B	17.4	B	13.2		41.7		54.1		36.2		13.6		18		13.6	
Potassium	-	-	8500 - 43000	495	B	675	B	1730	B	958	B	2130	B	991	B	705	B	2040		1320	B	701	B
Selenium	-	-	<0.1 - 0.125	0.51	U	0.47	U	0.71	U	0.39	U	0.62	U	0.66	B	0.34	U	0.43	U	0.42	U	0.39	U
Silver	1	2.2	-	1.4	B	0.14	U	0.2	U	1.7	B	1.4	B	1.2	B	1	B	1.3	B	0.8	B	0.5	B
Sodium	-	-	6000 - 8000	4160		3770		437	B	443	B	765	B	341	B	227	B	171	B	290	B	204	B
Thallium	-	-	-	0.7	U	0.64	U	1	B	0.53	U	0.84	U	0.74	U	0.46	U	0.6	B	0.57	U	0.53	U
Vanadium	-	-	11 - 119	7	B	3.9	B	19.3	B	12.8	B	25		17.4	B	11.7	B	18.9		16.3		12.8	B
Zinc	120	270	37 - 60	172	N	12.5	N	72.9	N	87.9	N	314	N	294	N	153	N	72.4	N	172	N	127	N
Cyanide	-	-	-	0.92	U	0.85	U	1.3	U	0.7	U	1.1	U	1.6		0.6	U	0.77	U	0.75	U	0.7	U

Notes:
(1) Lowest effect level
(2) Severe effect level
(3) From paper by E.Carol McGovern of FWS, NYSDEC.
Concentrations in mg/kg.
* - Duplicate analysis outside control limits.
E - Estimated value.
N - MS sample recov. outside control limits.
B - Value is less than CRDL but greater than IDL.
U - Analyzed but not detected.
MS: matrix spiked.

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Table 3-24. *1996 NYSDEC sampling - inorganic sediment data (detected constituents).*

Constituent	NYSDEC Sediment Criteria (1)	NYSDEC Sediment Criteria (2)	Background NYS Soil Concs. (3)	L11B		L12C		L13		L14		L15		L16		L17		L18		L19	
Aluminum	-	-	1000 - 25000	10300	*	5770	*	2820	*	3340		3700		3070		13200		7130		10600	
Antimony	2	25	-	0.68	UN	0.62	UN	0.69	UN	0.72	UN	0.65	UN	0.77	BN	0.7	UN	0.66	UN	0.74	UN
Arsenic	6	33	3 - 12	4.9		2.4		1.1	B	13.5	*	2.9	*	10.4	*	19.1	*	14.6	*	5.4	*
Barium	-	-	15 - 600	70.7		50		11.2	B	18.2	B	36.7	B	28.1	B	133		29.1	B	109	
Beryllium	-	-	ND - 1.75	0.53	B	0.32	B	0.19	B	0.3	B	0.2	B	0.16	B	0.87	B	0.44	B	0.57	B
Cadmium	0.6	9	0.21	0.28	B	0.25	B	0.27	B	0.26	B	0.24	B	0.15	B	0.05	U	0.05	U	0.47	B
Calcium	-	-	130 - 35000	57500		105000		26800		32900		50100		17500		69000		62600		160000	
Chromium	26	110	1.5 - 40	16.5		10.9		6.6		7.9	N*	7.6	N*	6.5	N*	21.7	N*	14.2	N*	23.5	N*
Cobalt	-	-	2.5 - 60	8.2	B	4.9	B	3	B	4.6	B	4.2	B	4.7	B	14.3		12.5		7.8	B
Copper	16	110	13	22.8	N*	14.6	N*	9.2	N*	14.4	*	12.3	*	9.7	*	25.6	*	20.6	*	57.5	*
Iron	20000	40000	17500 - 25000	17200	*	11300	*	7920	*	16400	*	12800	*	11900	*	34600	*	15900	*	23600	*
Lead	31	110	17	6.9		7		7.8		6.5	EN*	57.7	EN*	6.8	EN*	15.8	EN*	5.2	EN*	40.3	EN*
Magnesium	-	-	2500 - 6000	22300		23600		7320		12000	*	16900	*	4700	*	26500	*	22300	*	19100	
Manganese	460	1100	50 - 5000	401		296		151		187	N*	341	N*	121	N*	414	N*	368	N*	474	N*
Mercury	0.15	1.3	0.042 - 0.066	0.05	UN	0.05	UN	0.06	UN	0.07	U*	0.06	U*	0.06	U*	0.06	U*	0.06	U*	0.09	B*
Nickel	16	50	0.5 - 25	17.8		11.2		5.9	B	8.2	BEN*	6.8	BEN*	6.2	BEN	33.8	EN*	17.3	EN*	22.6	EN*
Potassium	-	-	8500 - 43000	2810		1650		673	B	1070	BE	1130	BE	693	BE	3900	E	2670	E	4270	E
Selenium	-	-	<0.1 - 0.125	0.35	U	0.32	U	0.36	U	0.37	U	0.34	U	0.34	U	0.36	U	0.34	U	0.38	U
Silver	1	2.2	-	0.1	U	0.09	U	0.1	U	0.31	B	0.25	B	0.19	B	0.38	B	0.21	B	0.55	B
Sodium	-	-	6000 - 8000	404	B	381	B	152	B	187	BE	322	BE	128	BE	549	BE	381	BE	539	BE
Thallium	-	-	-	0.48	U	0.44	U	0.49	U	0.57	B	0.46	U	0.47	U	0.88	B	0.47	U	0.52	U
Vanadium	-	-	11 - 119	24.5		14.3		7.9	B	11.4	B*	9	B*	8.2	B*	25.3	*	17	*	27.6	*
Zinc	120	270	37 - 60	47.2	N	40.2	N	38.6	N	40.9	E*	54.4	E*	48.3	E*	77.4	E*	39.2	E*	117	E*
Cyanide	-	-	-	0.63	U	0.58	U	0.64	U	0.66	U	0.61	U	0.61	U	0.65	U	0.61	U	0.68	U

Notes:
(1) Lowest effect level
(2) Severe effect level
(3) From paper by E.Carol McGovern of FWS, NYSDEC.
Concentrations in mg/kg.
* - Duplicate analysis outside control limits.
E - Estimated value.
N - MS sample recov. outside control limits.
B - Value is less than CRDL but greater than IDL.
U - Analyzed but not detected.
MS: matrix spiked.

RACER0060707

Table 3-24. *1996 NYSDEC sampling - inorganic sediment data (detected constituents).*

Constituent	NYSDEC Sediment Criteria (1)	NYSDEC Sediment Criteria (2)	Background NYS Soil Concs. (3)	L20		L22		L24		L25		L26		L27		L28	
Aluminum	-	-	1000 - 25000	6920		13100	*	4470	*	6860	*	5270	*	3530	*	25900	
Antimony	2	25	-	0.72	UN	3.3	BN*	18.7	N*	1	UN*	0.85	UN*	0.82	UN*	0.82	UN
Arsenic	6	33	3 - 12	4.6	*	10.3	*	6.8	*	6	*	3.8	*	3.6	*	4.9	*
Barium	-	-	15 - 600	76.5		127		101		81.8		316		196		197	
Beryllium	-	-	ND - 1.75	0.32	B	0.65	B	0.27	B	0.38	B	0.32	B	0.24	B	1.2	B
Cadmium	0.6	9	0.21	0.62	B	5.9		0.89	B	2.1		1.2	B	1.5		0.11	B
Calcium	-	-	130 - 35000	107000		72000		23000		85600		143000		193000		85400	
Chromium	26	110	1.5 - 40	17.9	N*	42.2		13.1		41.6		27.2		20.5		38.9	N*
Cobalt	-	-	2.5 - 60	7.9	B	7.2	B	7.3	B	6.9	B	6.1	B	3.8	B	15.8	
Copper	16	110	13	88.6	*	423	N*	118	N*	197	N*	42	N*	52.4	N*	28.8	*
Iron	20000	40000	17500 - 25000	12000	*	16400	*	25800	*	15000	*	11300	*	10100	*	36100	*
Lead	31	110	17	42.2	EN*	429	*	1170	*	153	*	77.3	*	134	*	11.1	EN*
Magnesium	-	-	2500 - 6000	15300	*	11700		4160		14200		18600		18600		17300	*
Manganese	460	1100	50 - 5000	413	N*	423	*	268	*	387	*	307	*	254	*	882	N*
Mercury	0.15	1.3	0.042 - 0.066	0.08	B*	0.19		0.11	B	0.19		0.12	B	0.1	B	0.08	B*
Nickel	16	50	0.5 - 25	15	EN*	38.6		19.9		37.3		18.2		14.8		35	EN*
Potassium	-	-	8500 - 43000	1330	BE	1780		599	B	1060	B	1470	B	1380	B	8430	E
Selenium	-	-	<0.1 - 0.125	0.37	U	1	B	2.2		0.52	U	0.6	B	0.44	B	0.43	U
Silver	1	2.2	-	1.2	B	9.3		0.59	B	2.2	B	0.13	B	0.17	B	0.34	B
Sodium	-	-	6000 - 8000	311	BE	356	B	233	B	706	B	409	B	495	B	1000	BE
Thallium	-	-	-	0.51	U	0.65	U	0.56	U	0.71	U	0.6	U	0.58	U	0.73	B
Vanadium	-	-	11 - 119	12.6	B*	26.5		18.2		22		28.2		18		50.3	*
Zinc	120	270	37 - 60	151	E*	781	E*	155	E*	383		811	E*	206	E*	78.7	E*
Cyanide	-	-	-	0.67	U	0.86	U	0.74	U	0.93	U	0.79	U	0.76	U	0.76	U

Notes:
(1) Lowest effect level
(2) Severe effect level
(3) From paper by E.Carol McGovern of FWS, NYSDEC.
Concentrations in mg/kg.
* - Duplicate analysis outside control limits.
E - Estimated value.
N - MS sample recov. outside control limits.
B - Value is less than CRDL but greater than IDL.
U - Analyzed but not detected.
MS: matrix spiked.

RACER0060708

Table 3-25. *1996 NYSDEC Sampling - TOC Sediment Data*

Sample Location	TOC Value
2	84500
L-11B	32000
L-16	15100
L-22	28700

Notes:
Concentrations in mg/kg.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-26A
Former IFG Facility
Syracuse, NY
Surface Water Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	NYS Water Quality Std. - Class B (3/98) ug/L	GM99-SW6 10/15/99 ug/L
Trichloroethene	40	5
cis-1,2-Dichloroethene	NC	4

NOTES: --- - not detected, J - estimated, N - tentatively identified.
NC - no criteria, [] - exceeds the NYS Water Quality Standard, * - hardness dependent.

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RACER0060710

O'BRIEN & GERE ENGINEERS, INC.

Table 3-26B
Former IFG Facility
Syracuse, NY
Surface Water Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	NYS Water Quality Std. - Class B (3/98) ug/L	GM98-SW1 11/16/98 ug/L	GM98-SW2 11/16/98 ug/L	GM98-SW3 11/16/98 ug/L	GM98-SW4 11/16/98 ug/L	GM98-SW6 11/17/98 ug/L	GM98-SW7 11/17/98 ug/L	GM99-SW1 10/14/99 ug/L
Acetone	NC	---	---	---	---	2 J	3 J	---
Methylene chloride	200	---	---	---	---	---	2 J	---
Trichloroethene	40	---	1 J	1 J	1 J	12	3 J	1 J
Vinyl chloride	NC	---	---	---	---	---	---	0.1 J
cis-1,2-Dichloroethene	NC	1 J	2 J	2 J	1 J	5 J	4 J	0.9 J

NOTES: --- - not detected, J - estimated, N - tentatively identified.
NC - no criteria, [] - exceeds the NYS Water Quality Standard, * - hardness dependent.

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RACER0060711

O'BRIEN & GERE ENGINEERS, INC.

Table 3-26B
Former IFG Facility
Syracuse, NY
Surface Water Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	NYS Water Quality Std. - Class B (3/98) ug/L	GM99-SW6 10/15/99 ug/L
Acetone	NC	1 J
Methylene chloride	200	0.4 J
Trichloroethene	40	5 J
Vinyl chloride	NC	0.2 J
cis-1,2-Dichloroethene	NC	3 J

NOTES: --- - not detected, J - estimated, N - tentatively identified.
NC - no criteria, [] - exceeds the NYS Water Quality Standard, * - hardness dependent.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-27
Former IFG Facility
Syracuse, NY
Surface Water Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	NYS Water Quality Std. - Class B (3/98) ug/L	GM98-SW1 11/16/98 ug/L	GM98-SW2 11/16/98 ug/L	GM98-SW3 11/16/98 ug/L	GM98-SW4 11/16/98 ug/L	GM98-SW5 11/16/98 ug/L	GM98-SW6 11/17/98 ug/L	GM98-SW7 11/17/98 ug/L
Di-n-octyl phthalate	NC	10 J	10 J	10 J	10 J	10 J	10 J	10 J

NOTES: --- - not detected, J - estimated, N - tentatively identified.
NC - no criteria, [] - exceeds the NYS Water Quality Standard, * - hardness dependent.

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RACER0060713

O'BRIEN & GERE ENGINEERS, INC.

Table 3-28
Former IFG Facility
Syracuse, NY
Surface Water Data Summary
Detected Method 8082 PCB Data

Compound	NYS Water Quality Std. - Class B (3/98) ug/L	GM99-SW1 10/14/99 ug/L
Aroclor 1248	0.000001	0.04 NJ

NOTES: --- - not detected, J - estimated, N - tentatively identified.
NC - no criteria, [] - exceeds the NYS Water Quality Standard, * - hardness dependent.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-29
Former IFG Facility
Syracuse, NY
Surface Water Data Summary
Detected Method 6010/7470/9010B Metals and Cyanide Data

Compound	NYS Water Quality Std. - Class B (3/98) mg/L	GM98-SW1 11/16/98 mg/L	GM98-SW2 11/16/98 mg/L	GM98-SW3 11/16/98 mg/L	GM98-SW4 11/16/98 mg/L	GM98-SW5 11/16/98 mg/L	GM98-SW6 11/17/98 mg/L	GM98-SW7 11/17/98 mg/L
Aluminum	0.1	[0.129]	---	---	---	---	---	---
Antimony	NC	---	0.0018 J	0.0015 J	0.0017 J	0.0023 J	0.0024 J	0.0018 J
Barium	NC	0.0661 J	---	---	---	---	---	---
Beryllium	0.011/1.1*	0.00041 J	---	---	---	---	---	---
Calcium	NC	139	---	---	---	---	---	---
Chromium	NC*	0.0065 J	0.0074 J	0.0068 J	0.0076 J	0.0080 J	0.0059 J	0.0080 J
Copper	NC*	0.0030 J	0.0033 J	0.0029 J	0.0055 J	0.0016 J	0.0038 J	0.0058 J
Iron	0.3	[0.430]	---	---	---	---	---	---
Lead	NC*	0.0030 J	---	---	0.0027 J	---	---	0.0045 J
Magnesium	NC	24.9	---	---	---	---	---	---
Manganese	NC	0.0711	---	---	---	---	---	---
Nickel	NC*	0.0013 J	0.0011 J	0.0010 J	0.0016 J	0.0014 J	0.0018 J	0.0023 J
Potassium	NC	2.65 J	---	---	---	---	---	---
Sodium	NC	102	---	---	---	---	---	---
Vanadium	0.014	---	---	---	---	---	---	---
Zinc	NC	0.0138	0.0127	0.0112	0.0290	0.0154	0.0355	0.0421
Cyanide	0.0052	---	---	---	---	---	---	---

NOTES: --- - not detected, J - estimated, N - tentatively identified.
NC - no criteria, [] - exceeds the NYS Water Quality Standard, * - hardness dependent.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-29
Former IFG Facility
Syracuse, NY
Surface Water Data Summary
Detected Method 6010/7470/9010B Metals and Cyanide Data

Compound	NYS Water Quality Std. - Class B (3/98) mg/L	GM99-SW1 10/14/99 mg/L	GM99-SW2 10/14/99 mg/L	GM99-SW3 10/14/99 mg/L	GM99-SW4 10/15/99 mg/L	GM99-SW5 10/15/99 mg/L	GM99-SW6 10/15/99 mg/L	GM99-SW7 10/15/99 mg/L
Aluminum	0.1	[0.809]	---	---	---	---	---	---
Antimony	NC	---	---	---	---	---	---	---
Barium	NC	0.0493 J	---	---	---	---	---	---
Beryllium	0.011/1.1*	---	---	---	---	---	---	---
Calcium	NC	76.2	---	---	---	---	---	---
Chromium	NC*	---	---	---	---	---	---	---
Copper	NC*	0.0086 J	0.0087 J	0.0078 J	0.0045 J	0.0024 J	0.0067 J	0.0048 J
Iron	0.3	[1.19]	---	---	---	---	---	---
Lead	NC*	0.0032 J	0.004 J	0.0023 J	0.0014 J	---	---	---
Magnesium	NC	11.7	---	---	---	---	---	---
Manganese	NC	0.0516	---	---	---	---	---	---
Nickel	NC*	0.0076 J	0.0107 J	0.0097 J	0.0056 J	0.0018 J	0.0024 J	0.013 J
Potassium	NC	2.55 J	---	---	---	---	---	---
Sodium	NC	58.9	---	---	---	---	---	---
Vanadium	0.014	0.0024 J	---	---	---	---	---	---
Zinc	NC	0.0334	0.0331	0.03	0.0219	0.0125	0.0339	0.0203
Cyanide	0.0052	---	---	---	---	---	[0.011]	---

NOTES: --- - not detected, J - estimated, N - tentatively identified.
NC - no criteria, [] - exceeds the NYS Water Quality Standard, * - hardness dependent.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-30A
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8021 Volatile Organic Compound Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) ug/Kg	GM98-SED09-G 0.0 - 0.5 ft 11/18/1998 ug/Kg	GM98-SED20A-G 0.0 - 0.5 ft 11/20/1998 ug/Kg	GM98-SED20B-G 0.5 - 1.0 ft 11/20/1998 ug/Kg	GM98-SED21A-G 0.0 - 0.5 ft 11/20/1998 ug/Kg	GM98-SED23-G 0.0 - 0.5 ft 11/20/1998 ug/Kg	GM98-SED24-G 0.0 - 0.5 ft 11/20/1998 ug/Kg	GM98-SED26-G 0.0 - 0.5 ft 11/20/1998 ug/Kg
Benzene	NC	---	---	2 J	---	---	---	---
Chloroform	NC	---	---	---	---	2 J	---	---
Methylene chloride	NC	---	65 J	360 J	---	---	---	---
Ethylbenzene	NC	2 NJ	---	---	---	---	3 NJ	---
Toluene	NC	---	12 J	16 NJ	6 NJ	---	---	2 NJ
Trichloroethene	NC	3	38 J	22 J	---	---	---	---
Xylene (total)	NC	---	5 J	4 NJ	---	---	---	10 NJ
cis-1,2-Dichloroethene	NC	---	2 J	---	---	---	---	---

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-30B
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8260 Volatile Organic Compound Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) ug/Kg	GM98-SED01-G 0.0 - 0.5 ft 11/17/1998 ug/Kg	GM98-SED01B-G 0.5 - 1.0 ft 11/17/1998 ug/Kg
2-Butanone (MEK)	NC	5 J	6 J
Acetone	NC	15 J	21 J

RACER0060718

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-31
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) ug/Kg	GM98-SED01-C 0.0 - 0.5 ft 11/17/1998 ug/Kg	GM98-SED01B-C 0.5 - 1.0 ft 11/17/1998 ug/Kg	GM98-SED02-C 0.0 - 0.5 ft 11/17/1998 ug/Kg	GM98-SED03-C 0.0 - 0.5 ft 11/17/1998 ug/Kg	GM98-SED04-C 0.0 - 0.5 ft 11/17/1998 ug/Kg	GM98-SED05-C 0.0 - 0.5 ft 11/18/1998 ug/Kg	GM98-SED06-C 0.0 - 0.5 ft 11/18/1998 ug/Kg
2,4-Dimethylphenol	NC	---	---	---	---	---	---	---
2-Methylnaphthalene	NC	61 J	83 J	---	380 J	3500 J	810	1000
2-Methylphenol	NC	---	---	---	---	---	---	---
4-Methylphenol	NC	---	---	---	---	---	---	290 J
Acenaphthene	140000	150 J	100 J	81 J	660	9900	1500	3100
Acenaphthylene	NC	130 J	130 J	---	71 J	---	160 J	160 J
Anthracene	NC	320 J	260 J	190 J	790	12000	1900	3900 J
Benzo(a)anthracene	NC	1900 J	1400 J	920 J	2900	30000	8000 J	12000 J
Benzo[a]pyrene	NC	2000 J	1600 J	1000 J	2600 J	27000 J	7400 J	11000 J
Benzo(b)fluoranthene	NC	2800 J	2000 J	1500 J	3900 J	27000	5800 J	14000 J
Benzo(ghi)perylene	NC	2000 J	1700 J	760 J	1400 J	20000	6400	9200 J
Benzo(k)fluoranthene	NC	910 J	780 J	550 J	1700 J	13000	3500 J	5800 J
Butyl benzyl phthalate	NC	---	---	---	---	---	---	---
Carbazole	NC	---	170 J	120 J	880	10000	1700	3300 J
Chrysene	NC	2100 J	1700 J	1200 J	3100	29000	8300 J	12000 J
Di-n-butyl phthalate	NC	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	NC	420 J	---	---	510 J	5900	---	---
Dibenzofuran	NC	81 J	78 J	---	630	8800	1500	2100
Fluoranthene	1020000	3900	1900	1900	6400	57000	17000	22000
Fluorene	NC	200 J	130 J	91 J	550	9400	1600	2500
Indeno(1,2,3-cd)pyrene	NC	1700 J	1500 J	650 J	1400 J	17000	5600 J	8600 J
Naphthalene	NC	57 J	80 J	---	1200	9300	1200	2700
Phenanthrene	120000	2000 J	1400	1000	5900	69000	19000	22000
Phenol	50	---	---	---	---	---	---	[79 J]
Pyrene	NC	5400	4400	2200 J	7000	68000	22000	29000

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

Table 3-31
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) ug/Kg	GM98-SED07A-C 0.0 - 0.5 ft 11/18/1998 ug/Kg	GM98-SED07B-C 0.5 - 1.0 ft 11/18/1998 ug/Kg	GM98-SED08-C 0.0 - 0.5 ft 11/18/1998 ug/Kg	GM98-SED09-C 0.0 - 0.5 ft 11/18/1998 ug/Kg	GM98-SED10-C 0.0 - 0.5 ft 11/18/1998 ug/Kg	GM98-SED11A-C 0.0 - 0.5 ft 11/18/1998 ug/Kg	GM98-SED11B-C 0.5 - 1.0 ft 11/18/1998 ug/Kg
2,4-Dimethylphenol	NC	170 J	---	---	---	76 J	---	---
2-Methylnaphthalene	NC	1300	180 J	270 J	100 J	1200	130 J	99 J
2-Methylphenol	NC	73 J	---	---	---	---	---	---
4-Methylphenol	NC	260 J	54 J	86 J	---	140 J	---	---
Acenaphthene	140000	3100	620	420 J	280 J	4000 J	420 J	240 J
Acenaphthylene	NC	140 J	140 J	250 J	90 J	220 J	180 J	120 J
Anthracene	NC	4400 J	930 J	1100 J	760 J	4700 J	980 J	560 J
Benzo(a)anthracene	NC	13000	3500 J	4400 J	2600 J	15000 J	4100 J	2500 J
Benzo[a]pyrene	NC	11000 J	3500 J	4900	2500 J	13000	4600 J	2900 J
Benzo(b)fluoranthene	NC	14000	4500 J	6500	2900 J	17000	6100 J	3800 J
Benzo(ghi)perylene	NC	8600 J	2900 J	4900 J	2100 J	13000	4600 J	3200 J
Benzo(k)fluoranthene	NC	4500 J	1400 J	2200	1100 J	6400 J	2000 J	1300 J
Butyl benzyl phthalate	NC	---	---	---	---	---	---	---
Carbazole	NC	3200 J	640 J	650 J	370 J	4000 J	470 J	230 J
Chrysene	NC	12000	3800 J	4300 J	2600 J	16000 J	4900 J	3300 J
Di-n-butyl phthalate	NC	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	NC	2700 J	---	1500 J	760 J	4400	---	830 J
Dibenzofuran	NC	2400	300 J	420 J	210 J	2900 J	250 J	130 J
Fluoranthene	1020000	23000	6700	4600 J	4200 J	30000	7800	4200 J
Fluorene	NC	2600	460 J	590 J	330 J	3400 J	490 J	310 J
Indeno(1,2,3-cd)pyrene	NC	8200 J	2850 J	4300	2000 J	12000	3900 J	2800 J
Naphthalene	NC	2300	280 J	430 J	200 J	2800	140 J	83 J
Phenanthrene	120000	26000	4900 J	5700	3100 J	32000	4900 J	2900 J
Phenol	50	[99 J]	---	---	---	[86 J]	---	---
Pyrene	NC	32000	9400	13000	6100 J	36000 J	13000	6600 J

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-31
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) ug/Kg	GM98-SED12-C 0.0 - 0.5 ft 11/19/1998 ug/Kg	GM98-SED13-C 0.0 - 0.5 ft 11/19/1998 ug/Kg	GM98-SED14-C 0.0 - 0.5 ft 11/19/1998 ug/Kg	GM98-SED15-C 0.0 - 0.5 ft 11/19/1998 ug/Kg	GM98-SED16-C 0.0 - 0.5 ft 11/19/1998 ug/Kg	GM98-SED17-C 0.0 - 0.5 ft 11/19/1998 ug/Kg	GM98-SED18A-C 0.0 - 0.5 ft 11/19/1998 ug/Kg
2,4-Dimethylphenol	NC	---	---	---	---	---	---	---
2-Methylnaphthalene	NC	130 J	110 J	120 J	120 J	180 J	170 J	---
2-Methylphenol	NC	---	---	---	---	---	---	---
4-Methylphenol	NC	---	---	---	---	65 J	---	---
Acenaphthene	140000	460 J	270 J	260 J	420 J	610	630	---
Acenaphthylene	NC	---	110 J	54 J	120 J	190 J	130 J	---
Anthracene	NC	710	540	430 J	1100	1300 J	1300 J	---
Benzo(a)anthracene	NC	3400 J	2800 J	1700 J	4900 J	5700 J	4700 J	180 J
Benzo[a]pyrene	NC	3500 J	3000 J	1600 J	5100 J	5600 J	4700 J	210 J
Benzo(b)fluoranthene	NC	5700 J	4500 J	2300 J	7400 J	8000 J	6600 J	290 J
Benzo(ghi)perylene	NC	3000 J	2700 J	1600 J	4500 J	4200 J	4000 J	140 J
Benzo(k)fluoranthene	NC	1900 J	1400 J	730 J	2700 J	3000 J	2400 J	99 J
Butyl benzyl phthalate	NC	---	---	---	610 J	350 J	---	---
Carbazole	NC	400 J	360 J	300 J	560	790 J	860 J	---
Chrysene	NC	3900 J	3200 J	1900 J	5700 J	6300 J	5200 J	210 J
Di-n-butyl phthalate	NC	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	NC	850 J	750 J	450 J	1300 J	1300 J	1200 J	---
Dibenzofuran	NC	200 J	150 J	180 J	250 J	400 J	410 J	---
Fluoranthene	1020000	5200	4100	2900	9400	7500	9200	390 J
Fluorene	NC	410 J	270 J	270 J	470 J	620	670	---
Indeno(1,2,3-cd)pyrene	NC	2500 J	2400 J	1300 J	4000 J	3900 J	3600 J	130 J
Naphthalene	NC	140 J	---	150 J	140 J	330 J	250 J	---
Phenanthrene	120000	3700	2800	2500	6100	7300	7300	210 J
Phenol	50	---	---	---	---	---	---	---
Pyrene	NC	11000 J	8300 J	4900 J	14000 J	18000 J	14000 J	420 J

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-31
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) ug/Kg	GM98-SED19-C 0.0 - 0.5 ft 11/19/1998 ug/Kg	GM98-SED20A-C 0.0 - 0.5 ft 11/20/1998 ug/Kg	GM98-SED20B-C 0.5 - 1.0 ft 11/20/1998 ug/Kg	GM98-SED21A-C 0.0 - 0.5 ft 11/20/1998 ug/Kg	GM98-SED21B-C 0.5 - 1.0 ft 11/20/1998 ug/Kg	GM98-SED22-C 0.0 - 0.5 ft 11/20/1998 ug/Kg	GM98-SED23-C 0.0 - 0.5 ft 11/20/1998 ug/Kg
2,4-Dimethylphenol	NC	---	---	---	---	---	---	---
2-Methylnaphthalene	NC	59 J	5500	580	---	---	---	94 J
2-Methylphenol	NC	---	---	---	---	---	---	---
4-Methylphenol	NC	---	450 J	48 J	---	---	---	53 J
Acenaphthene	140000	170 J	21000	1900	55 J	61 J	---	360 J
Acenaphthylene	NC	98 J	---	130 J	---	---	---	150 J
Anthracene	NC	660 J	25000	3700 J	110 J	89 J	---	930 J
Benzo(a)anthracene	NC	2700 J	60000 J	9600	570 J	340 J	---	3600 J
Benzo[a]pyrene	NC	2400 J	50000 J	7600 J	670 J	330 J	---	3500 J
Benzo(b)fluoranthene	NC	3200 J	66000 J	11000 J	1100 J	470 J	---	4800 J
Benzo(ghi)perylene	NC	2000 J	36000 J	5600 J	570 J	220 J	---	2200 J
Benzo(k)fluoranthene	NC	1200 J	20000 J	3700 J	370 J	190 J	---	1500 J
Butyl benzyl phthalate	NC	---	---	---	---	---	---	---
Carbazole	NC	190 J	20000 J	3800 J	93 J	---	---	340 J
Chrysene	NC	2700 J	59000 J	10000	800 J	380 J	---	4100 J
Di-n-butyl phthalate	NC	---	---	---	---	---	45 J	---
Dibenzo(a,h)anthracene	NC	570 J	11000 J	1900 J	160 J	---	---	760 J
Dibenzofuran	NC	120 J	14000	1900	---	---	---	200 J
Fluoranthene	1020000	4300	130000	26000	1200	810	---	7200
Fluorene	NC	330 J	18000	2300	70 J	51 J	---	490
Indeno(1,2,3-cd)pyrene	NC	1700 J	34000 J	5500 J	510	300 J	---	2100 J
Naphthalene	NC	68 J	10000	1100	---	---	---	98 J
Phenanthrene	120000	3500	[130000]	27000	760	490	---	4400
Phenol	50	---	---	---	---	---	---	---
Pyrene	NC	7100 J	130000 J	23000	1600 J	1100 J	---	8400 J

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-31
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8270 Semivolatile Organic Compound Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) ug/Kg	GM98-SED24-C 0.0 - 0.5 ft 11/20/1998 ug/Kg	GM98-SED25-C 0.0 - 0.5 ft 11/20/1998 ug/Kg	GM98-SED26-C 0.0 - 0.5 ft 11/20/1998 ug/Kg
2,4-Dimethylphenol	NC	---	---	---
2-Methylnaphthalene	NC	150 J	63 J	410 J
2-Methylphenol	NC	---	---	---
4-Methylphenol	NC	150 J	---	---
Acenaphthene	140000	500	310 J	1900
Acenaphthylene	NC	230 J	---	68 J
Anthracene	NC	1100 J	520	2700
Benzo(a)anthracene	NC	5500 J	1600 J	7500 J
Benzo[a]pyrene	NC	5600 J	1400 J	6800 J
Benzo(b)fluoranthene	NC	7900 J	2100 J	9100 J
Benzo(ghi)perylene	NC	4900 J	1100 J	4800 J
Benzo(k)fluoranthene	NC	2700 J	660 J	3100 J
Butyl benzyl phthalate	NC	---	220 J	---
Carbazole	NC	710 J	400 J	2300 J
Chrysene	NC	6300 J	1700 J	8100 J
Di-n-butyl phthalate	NC	---	---	---
Dibenzo(a,h)anthracene	NC	1300 J	160 J	1400 J
Dibenzofuran	NC	320 J	190 J	1300
Fluoranthene	1020000	11000	2900	15000
Fluorene	NC	600	260 J	1800
Indeno(1,2,3-cd)pyrene	NC	4300 J	74 J	4500 J
Naphthalene	NC	190 J	100 J	930
Phenanthrene	120000	6800	2800	17000
Phenol	50	[71 J]	---	---
Pyrene	NC	15000 J	4500 J	20000

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

Table 3-32
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8082 PCB Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/Kg	GM98-SED01-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED01B-C 0.5 - 1.0 ft 11/17/1998 mg/Kg	GM98-SED02-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED03-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED04-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED05-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED06-C 0.0 - 0.5 ft 11/18/1998 mg/Kg
Aroclor 1248	19.3	14	17	0.72	0.15	0.61	1.5	1.3
Aroclor 1254	19.3	---	---	---	---	---	---	---
Aroclor 1260	19.3	---	---	---	0.041	---	---	0.36

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-32
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8082 PCB Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/Kg	GM98-SED07A-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED07B-C 0.5 - 1.0 ft 11/18/1998 mg/Kg	GM98-SED08-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED09-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED10-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED11A-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED11B-C 0.5 - 1.0 ft 11/18/1998 mg/Kg
Aroclor 1248	19.3	1.8	7.9	[25]	0.43	0.79	1.8	4.4
Aroclor 1254	19.3	---	---	---	---	---	---	---
Aroclor 1260	19.3	0.35	---	---	0.15	0.51	0.33	---

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-32
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8082 PCB Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/Kg	GM98-SED12-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED13-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED14-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED15-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED16-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED17-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED19-C 0.0 - 0.5 ft 11/19/1998 mg/Kg
Aroclor 1248	19.3	1	5.6	0.89	0.32	0.75	0.20	---
Aroclor 1254	19.3	---	---	---	---	---	---	0.14
Aroclor 1260	19.3	0.32	---	0.45	0.24	0.31	0.34	---

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-32
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8082 PCB Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/Kg	GM98-SED20A-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED20B-C 0.5 - 1.0 ft 11/20/1998 mg/Kg	GM98-SED21A-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED21B-C 0.5 - 1.0 ft 11/20/1998 mg/Kg	GM98-SED22-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED23-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED24-C 0.0 - 0.5 ft 11/20/1998 mg/Kg
Aroclor 1248	19.3	0.16	0.066	---	0.031	---	0.061	0.098
Aroclor 1254	19.3	---	---	---	---	---	---	---
Aroclor 1260	19.3	0.27	0.067	0.045	0.079	0.093	0.025	0.063

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-32
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8082 PCB Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/Kg	GM98-SED25-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED26-C 0.0 - 0.5 ft 11/20/1998 mg/Kg
Aroclor 1248	19.3	---	---
Aroclor 1254	19.3	---	---
Aroclor 1260	19.3	0.65	1.3

NOTES: --- - not detected, J - estimated,. N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

Table 3-33
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 6010/7470/9010B/9014 Metals and Cyanide Data

Compound	NYS Sediment Criteria - LEL (3/98) mg/Kg	GM98-SED01-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED01B-C 0.5 - 1.0 ft 11/17/1998 mg/Kg	GM98-SED02-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED03-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED04-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED05-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED06-C 0.0 - 0.5 ft 11/18/1998 mg/Kg
Aluminum	NC	4790	7210	---	---	---	---	---
Antimony	2	0.27 J	0.39 J	0.23 J	---	0.17 J	0.20 J	0.28 J
Arsenic	6	4.4	[6.4]	4.9	[6.7]	3.4	4.2	[6.2]
Barium	NC	55.4	63.7	---	---	---	---	---
Beryllium	NC	0.26 J	0.39 J	---	---	---	---	---
Cadmium	0.6	[1.2 J]	[1.4 J]	---	---	---	---	---
Calcium	NC	31300	23300	---	---	---	---	---
Chromium	26	[76.6]	[153]	23.9	11.4	12.5	22.9	[30.4]
Cobalt	NC	3.9 J	5.5 J	---	---	---	---	---
Copper	NC	69.7	128	31.1	29.3	14.6	35.1	54.9
Iron	200000	11400	16300	---	---	---	---	---
Lead	31	[78.4 J]	[60.5 J]	24.1	[36.6]	12.4	[40.3]	[66.4]
Magnesium	NC	6940	6610	---	---	---	---	---
Manganese	460	167	190	---	---	---	---	---
Nickel	16	[31.8]	[57.9]	15.1	7.9	7.2	12.3	15.4
Potassium	NC	423 J	903	---	---	---	---	---
Selenium	NC	0.62 J	0.93	0.56 J	0.83	0.45 J	0.49 J	1.1
Silver	1	0.49 J	[1.4 J]	---	---	---	---	---
Sodium	NC	226	261	---	---	---	---	---
Vanadium	NC	12.9	17.6	---	---	---	---	---
Zinc	120	119	[146]	87.5	59.6	69.6	[133]	[223]
Cyanide	NC	---	---	---	---	---	---	1.8

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-33
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 6010/7470/9010B/9014 Metals and Cyanide Data

Compound	NYS Sediment Criteria - LEL (3/98) mg/Kg	GM98-SED07A-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED07B-C 0.5 - 1.0 ft 11/18/1998 mg/Kg	GM98-SED08-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED09-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED10-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED11A-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED11B-C 0.5 - 1.0 ft 11/18/1998 mg/Kg
Aluminum	NC	---	---	---	---	---	---	---
Antimony	2	0.42 J	0.31 J	0.30 J	0.19 J	0.55 J	0.35 J	0.46 J
Arsenic	6	5.7	4.9	[7.0]	2.2	5.2	5.7	6.0
Barium	NC	---	---	---	---	---	---	---
Beryllium	NC	---	---	---	---	---	---	---
Cadmium	0.6	---	---	---	---	---	---	---
Calcium	NC	---	---	---	---	---	---	---
Chromium	26	[26.6]	[75.1]	[108]	17.5	25.0	[36.1]	[56.6]
Cobalt	NC	---	---	---	---	---	---	---
Copper	NC	46.3	60.7	109	14.7	50.1	71.5	70.4
Iron	200000	---	---	---	---	---	---	---
Lead	31	[55.7]	[72.4]	[172]	17.0	[61.0]	[104]	[126]
Magnesium	NC	---	---	---	---	---	---	---
Manganese	460	---	---	---	---	---	---	---
Nickel	16	14.3	[28.6]	[44.0]	6.5 J	11.9	[19.1]	[21.7]
Potassium	NC	---	---	---	---	---	---	---
Selenium	NC	0.60 J	0.60 J	1.2	---	0.82 J	0.79 J	0.70 J
Silver	1	---	---	---	---	---	---	---
Sodium	NC	---	---	---	---	---	---	---
Vanadium	NC	---	---	---	---	---	---	---
Zinc	120	[174]	[143]	[247]	67.1	[390]	[228]	[200]
Cyanide	NC	---	---	---	---	---	---	---

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-33
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 6010/7470/9010B/9014 Metals and Cyanide Data

Compound	NYS Sediment Criteria - LEL (3/98) mg/Kg	GM98-SED12-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED13-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED14-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED15-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED16-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED17-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED18A-C 0.0 - 0.5 ft 11/19/1998 mg/Kg
Aluminum	NC	---	---	---	---	---	---	---
Antimony	2	0.49 J	0.33 J	---	0.24 J	0.3 J	0.23 J	---
Arsenic	6	4.2	4.5	5.2	3.5	2.8	4.3	2
Barium	NC	---	---	---	---	---	---	---
Beryllium	NC	---	---	---	---	---	---	---
Cadmium	0.6	---	---	---	---	---	---	---
Calcium	NC	---	---	---	---	---	---	---
Chromium	26	20.7	[31.5]	18.9	20.2	19.7	23 J	13.5 J
Cobalt	NC	---	---	---	---	---	---	---
Copper	NC	47.6	62.1	29.8	48.9	35.4	42.6	10.6
Iron	200000	---	---	---	---	---	---	---
Lead	31	[42.5]	[67.5]	26.9	[42.9]	[47.1]	[54.3]	8.9
Magnesium	NC	---	---	---	---	---	---	---
Manganese	460	---	---	---	---	---	---	---
Nickel	16	11.1	15.8	[19.1]	12.2	8.4	10.8	11.2
Potassium	NC	---	---	---	---	---	---	---
Selenium	NC	0.85	0.54 J	0.54 J	0.52 J	---	0.58 J	0.4 J
Silver	1	---	---	---	---	---	---	---
Sodium	NC	---	---	---	---	---	---	---
Vanadium	NC	---	---	---	---	---	---	---
Zinc	120	[146]	[163]	85.8	[147]	[122]	109	44.9
Cyanide	NC	---	---	---	---	---	---	---

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NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-33
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 6010/7470/9010B/9014 Metals and Cyanide Data

Compound	NYS Sediment Criteria - LEL (3/98) mg/Kg	GM98-SED18B-C 0.5 - 1.0 ft 11/19/1998 mg/Kg	GM98-SED19-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED20A-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED20B-C 0.5 - 1.0 ft 11/20/1998 mg/Kg	GM98-SED21A-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED21B-C 0.5 - 1.0 ft 11/20/1998 mg/Kg	GM98-SED22-C 0.0 - 0.5 ft 11/20/1998 mg/Kg
Aluminum	NC	---	---	---	---	---	---	---
Antimony	2	---	---	---	0.18 J	0.23 J	---	---
Arsenic	6	2.3	3	5.9	[11.3]	4.7	[8.3]	[13.7]
Barium	NC	---	---	---	---	---	---	---
Beryllium	NC	---	---	---	---	---	---	---
Cadmium	0.6	---	---	---	---	---	---	---
Calcium	NC	---	---	---	---	---	---	---
Chromium	26	8.3 J	7.6 J	17.1 J	12.1 J	6.9 J	8.3 J	20 J
Cobalt	NC	---	---	---	---	---	---	---
Copper	NC	6.7	14.7	22.1	34.1	26.1	13.7	24.2
Iron	200000	---	---	---	---	---	---	---
Lead	31	2.5	10.6	21.7	17.8	9.1	10.7	9.7
Magnesium	NC	---	---	---	---	---	---	---
Manganese	460	---	---	---	---	---	---	---
Nickel	16	7.8	4.5 J	11.5	13.0	---	---	15.6
Potassium	NC	---	---	---	---	---	---	---
Selenium	NC	0.45 J	43 J	0.41 J	0.39 J	---	0.34 J	---
Silver	1	---	---	---	---	---	---	---
Sodium	NC	---	---	---	---	---	---	---
Vanadium	NC	---	---	---	---	---	---	---
Zinc	120	35.4	50.9	91.4	53.3	47.2	40.4	60.6
Cyanide	NC	---	---	---	---	---	---	---

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NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

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Table 3-33
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 6010/7470/9010B/9014 Metals and Cyanide Data

Compound	NYS Sediment Criteria - LEL (3/98) mg/Kg	GM98-SED23-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED24-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED25-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED26-C 0.0 - 0.5 ft 11/20/1998 mg/Kg
Aluminum	NC	---	---	---	---
Antimony	2	0.4 J	0.41 J	---	0.21 J
Arsenic	6	3.7	3.4	[9.6]	[13]
Barium	NC	---	---	---	---
Beryllium	NC	---	---	---	---
Cadmium	0.6	---	---	---	---
Calcium	NC	---	---	---	---
Chromium	26	14.1 J	21.2 J	[26.1 J]	[45.6 J]
Cobalt	NC	---	---	---	---
Copper	NC	29.3	55.9	28.3	79.7
Iron	200000	---	---	---	---
Lead	31	[42.9]	[57.4]	[34.3]	[105]
Magnesium	NC	---	---	---	---
Manganese	460	---	---	---	---
Nickel	16	11.4	13.2	[19.1]	[24]
Potassium	NC	---	---	---	---
Selenium	NC	0.76	0.69 J	0.59 J	0.74 J
Silver	1	---	---	---	---
Sodium	NC	---	---	---	---
Vanadium	NC	---	---	---	---
Zinc	120	97.4	[158]	98.1	[257]
Cyanide	NC	---	1.2	---	---

RACER0060735

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-34
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected TOC Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/kg	GM98-SED01-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED01B-C 0.5 - 1.0 ft 11/17/1998 mg/Kg	GM98-SED02-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED03-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED04-C 0.0 - 0.5 ft 11/17/1998 mg/Kg	GM98-SED05-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED06-C 0.0 - 0.5 ft 11/18/1998 mg/Kg
TOC	NC	34400	41000	35200	38100	12700	31600	45800

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-34
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected TOC Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/kg	GM98-SED07A-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED07B-C 0.5 - 1.0 ft 11/18/1998 mg/Kg	GM98-SED08-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED09-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED10-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED11A-C 0.0 - 0.5 ft 11/18/1998 mg/Kg	GM98-SED11B-C 0.5 - 1.0 ft 11/18/1998 mg/Kg
TOC	NC	34700	34200	64500	6720	59000 J	64400	67200

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-34
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected TOC Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/kg	GM98-SED12-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED13-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED14-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED15-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED16-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED17-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED18A-C 0.0 - 0.5 ft 11/19/1998 mg/Kg
TOC	NC	27900	28100	37500	29500	61100	41000	14800

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NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-34
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected TOC Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/kg	GM98-SED18B-C 0.5 - 1.0 ft 11/19/1998 mg/Kg	GM98-SED19-C 0.0 - 0.5 ft 11/19/1998 mg/Kg	GM98-SED20A-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED20B-C 0.5 - 1.0 ft 11/20/1998 mg/Kg	GM98-SED21A-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED21B-C 0.5 - 1.0 ft 11/20/1998 mg/Kg	GM98-SED22-C 0.0 - 0.5 ft 11/20/1998 mg/Kg
TOC	NC	13700	16800	22700	20500	25400 J	11100	26800

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-34
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected TOC Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/kg	GM98-SED23-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED24-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED25-C 0.0 - 0.5 ft 11/20/1998 mg/Kg	GM98-SED26-C 0.0 - 0.5 ft 11/20/1998 mg/Kg
TOC	NC	35600	37900	33900	42400

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-35
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8290 Dioxin and Furan Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/kg	GM98-SED01 0.0 - 0.5 ft 11/17/1998 ng/Kg	GM98-SED01B 0.5 - 1.0 ft 11/17/1998 ng/Kg	GM98-SED07A 0.0 - 0.5 ft 11/18/1998 ng/Kg	GM98-SED11A 0.0 - 0.5 ft 11/18/1998 ng/Kg	GM98-SED11B 0.5 - 1.0 ft 11/18/1998 ng/Kg	GM98-SED16 0.0 - 0.5 ft 11/19/1998 ng/Kg	GM98-SED17 0.0 - 0.5 ft 11/19/1998 ng/Kg
2,3,7,8-Tetrachlorodibenzo-p-dioxin	NC	3.93	3.83	13.3	6.04	4.68	2.58	6.07
2,3,7,8-Tetrachlorodibenzofuran	NC	16.5	20.3	13.5 J	18.2	2.8	12.2 J	33.7
1,2,3,7,8-Pentachlorodibenzofuran	NC	6.10	6.46	8.06	13.4	19.9	5.42	25.7
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NC	6.96	6.03	23.8	11.8	13.8	5.6	11.2
2,3,4,7,8-Pentachlorodibenzofuran	NC	19.9	27.1	10.9	14	22.2	8.54	25.9
1,2,3,4,7,8-Hexachlorodibenzofuran	NC	16.9	24.1	14.3	22.7 J	33.6 J	10.6 J	40.2 J
1,2,3,6,7,8-Hexachlorodibenzofuran	NC	7.43	10.1	8.09	14.6 J	20.2 J	---	22.4 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NC	---	---	6.37	6.92 J	10.1 J	---	6.64 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NC	16.1	16.7	33.7	29.8 J	40.1 J	10.5 J	29.5 J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NC	15.8	16	48	28.9 J	35.9 J	12 J	24.5 J
2,3,4,6,7,8-Hexachlorodibenzofuran	NC	5.12	6.63	7.37	10.6 J	15.6 J	---	17.8 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NC	54	67.9	80.2	131 J	193 J	49.5 J	162 J
1,2,3,4,6,7,8-Heptachlorodibenzop-dioxin	NC	212	216	381	444 J	676 J	167 J	575 J
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NC	9.53	12.2	12.4	18.8 J	34.8 J	7.64 J	31.9 J
Octachlorodibenzo-p-dioxin	NC	1870	1900	3050	2950	5680	1860 J	4220
Octachlorodibenzofuran	NC	149	183	206	324 J	468 J	141 J	413 J
Total Tetra-Dioxins	NC	20.9	23.6	73.2	42.2	44.8	20.2	52.2
Total Penta-Dioxins	NC	27.7	27.1	140	62.4	76.2	24.2	66.2
Total Hexa-Dioxins	NC	187	172	566	355 J	432 J	143 J	326 J
Total Hepta-Dioxins	NC	491	499	879	910 J	1330 J	370 J	1250 J
Total Tetra-Furans	NC	352	427	172	260	403	127	394
Total Penta-Furans	NC	165	203	103	151	250	76.9	237
Total Hexa-Furans	NC	104	133	134	214 J	320 J	78.3 J	288 J
Total Hepta-Furans	NC	170	196	214	350 J	571 J	127 J	479 J

NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

O'BRIEN & GERE ENGINEERS, INC.

Table 3-35
Former IFG Facility
Syracuse, NY
Sediment Data Summary
Detected Method 8290 Dioxin and Furan Data

Compound	NYS Sediment Criteria - BAL Chronic (3/98) mg/kg	GM98-SED18A 0.0 - 0.5 ft 11/19/1998 ng/Kg	GM98-SED19 0.0 - 0.5 ft 11/19/1998 ng/Kg	GM98-SED20A 0.0 - 0.5 ft 11/20/1998 ng/Kg	GM98-SED20B 0.5 - 1.0 ft 11/20/1998 ng/Kg
2,3,7,8-Tetrachlorodibenzo-p-dioxin	NC	---	1.02	4.96	---
2,3,7,8-Tetrachlorodibenzofuran	NC	0.58	3.66	10.1 J	2.78
1,2,3,7,8-Pentachlorodibenzofuran	NC	---	---	5.76	---
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	NC	---	---	11	---
2,3,4,7,8-Pentachlorodibenzofuran	NC	---	---	6.47	---
1,2,3,4,7,8-Hexachlorodibenzofuran	NC	---	---	10.6 J	---
1,2,3,6,7,8-Hexachlorodibenzofuran	NC	---	---	5.62 J	---
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	NC	---	---	---	---
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	NC	---	---	21.3 J	---
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	NC	---	---	24.3 J	---
2,3,4,6,7,8-Hexachlorodibenzofuran	NC	---	---	---	---
1,2,3,4,6,7,8-Heptachlorodibenzofuran	NC	---	16.1 J	44.5 J	8.92 J
1,2,3,4,6,7,8-Heptachlorodibenzop-dioxin	NC	9.73 J	73.5 J	317 J	36.9 J
1,2,3,4,7,8,9-Heptachlorodibenzofuran	NC	---	---	7.24 J	---
Octachlorodibenzo-p-dioxin	NC	97.5 J	749 J	1770	385 J
Octachlorodibenzofuran	NC	---	40.6 J	95.5 J	23.1 J
Total Tetra-Dioxins	NC	---	5.39	34.8	3.99
Total Penta-Dioxins	NC	---	---	55.8	---
Total Hexa-Dioxins	NC	---	41.7 J	309 J	24.2 J
Total Hepta-Dioxins	NC	20.5 J	155 J	802 J	81.6 J
Total Tetra-Furans	NC	1.16	36.5	152	46.5 J
Total Penta-Furans	NC	---	8.28	65.8	6.74 J
Total Hexa-Furans	NC	---	17.7 J	76.1 J	6.39 J
Total Hepta-Furans	NC	7 J	38.6 J	140 J	20.8 J

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NOTES: --- - not detected, J - estimated, N - tentatively identified.
-C - composite sample, -G - grab sample, NC - no criteria, [] - Exceeds NYS Sediment Criteria.

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Table 3-36
Former IFG Facility
Syracuse, NY
1998 Sediment Samples
8290 Dioxins and Furans Toxicity Equivalent Quotient (TEQ) Data

Compound	Toxicity Equivalent Factor (TEF)	GM98-SED01 0.0 - 0.5 ft. 11/17/1998 ng/Kg	GM98-SED01B 0.5 - 1.0 ft. 11/17/1998 ng/Kg	GM98-SED07A 0.0 - 0.5 ft. 11/18/1998 ng/Kg	GM98-SED11A 0.0 - 0.5 ft. 11/18/1998 ng/Kg	GM98-SED11B 0.5 - 1.0 ft. 11/18/1998 ng/Kg	GM98-SED16 0.0 - 0.5 ft. 11/19/1998 ng/Kg	GM98-SED17 0.0 - 0.5 ft. 11/19/1998 ng/Kg
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1	3.93	3.83	13.3	6.04	4.68	2.58	6.07
2,3,7,8-Tetrachlorodibenzofuran	0.1	1.65	2.03	1.35	1.82	0.28	1.22	3.37
1,2,3,7,8-Pentachlorodibenzofuran	0.05	0.31	0.32	0.4	0.67	1	0.27	1.29
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.5	3.48	3.02	11.9	5.9	6.9	2.8	5.6
2,3,4,7,8-Pentachlorodibenzofuran	0.5	9.95	13.55	5.45	7	11.1	4.27	12.95
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1	1.69	2.41	1.43	2.27	3.36	1.06	4.02
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1	0.74	1.01	0.81	1.46	2.02	0.5	2.24
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.5	0.5	0.64	0.69	1.01	0.5	0.66
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1	1.61	1.67	3.37	2.98	4.01	1.05	2.95
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1	1.58	1.6	4.8	2.89	3.59	1.2	2.45
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1	0.51	0.66	0.74	1.06	1.56	0.5	1.78
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01	0.54	0.68	0.8	1.31	1.93	0.5	1.62
1,2,3,4,6,7,8-Heptachlorodibenzop-dioxin	0.01	2.12	2.16	3.81	4.44	6.76	1.67	5.75
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01	0.1	0.12	0.12	0.19	0.35	0.08	0.32
Octachlorodibenzo-p-dioxin	0.001	1.87	1.9	3.05	2.95	5.68	1.86	4.22
Octachlorodibenzofuran	0.001	0.15	0.18	0.21	0.32	0.47	0.14	0.41
Total TEQ		31.22	36.15	52.68	42.49	55.19	20.69	56.2

NOTES:

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O'BRIEN & GERE ENGINEERS, INC.

Table 3-36
Former IFG Facility
Syracuse, NY
1998 Sediment Samples
8290 Dioxins and Furans Toxicity Equivalent Quotient (TEQ) Data

Compound	Toxicity Equivalent Factor (TEF)	GM98-SED18A 0.0 - 0.5 ft. 11/19/1998 ng/Kg	GM98-SED18B 0.5 - 1.0 ft. 11/19/1998 ng/Kg	GM98-SED19 0.0 - 0.5 ft. 11/19/1998 ng/Kg	GM98-SED20A 0.0 - 0.5 ft. 11/20/1998 ng/Kg	GM98-SED20B 0.5 - 1.0 ft. 11/20/1998 ng/Kg
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1	1	1	1.02	4.96	1
2,3,7,8-Tetrachlorodibenzofuran	0.1	0.06	0.01	0.37	1.01	0.28
1,2,3,7,8-Pentachlorodibenzofuran	0.05	0.25	0.25	0.25	0.29	0.25
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.5	2.5	2.5	2.5	5.5	2.5
2,3,4,7,8-Pentachlorodibenzofuran	0.5	2.5	2.5	2.5	3.24	2.5
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1	0.5	0.5	0.5	1.06	0.5
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1	0.5	0.5	0.5	0.56	0.5
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.5	0.5	0.5	0.5	0.5
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.5	0.5	0.5	2.13	0.5
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1	0.5	0.5	0.5	2.43	0.5
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1	0.5	0.5	0.5	0.5	0.5
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1	0.5	0.5	0.5	0.5	0.5
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01	0.05	0.05	0.16	0.45	0.09
1,2,3,4,6,7,8-Heptachlorodibenzop-dioxin	0.01	0.1	0.05	0.74	3.17	0.37
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01	0.05	0.05	0.05	0.07	0.05
Octachlorodibenzo-p-dioxin	0.001	0.1	0.01	0.75	1.77	0.39
Octachlorodibenzofuran	0.001	0.01	0.01	0.04	0.1	0.02
Total TEQ		10.11	9.93	11.87	28.23	10.94

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NOTES:

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Table

Fish Data - 1985 Ley Creek Sampling Program

Species	Aroclor 1248 (ug/g)	Aroclor 1254 (ug/g)	Total PCB (ug/g)	Dry Weight (%)	Lipid Weight (%)	Total Weight (g)
Bluegill	≤0.2	-	≤0.2	25	0.25	60
Bluegill	≤0.3	-	≤0.3	27.4	0.26	62
Bluegill	≤0.2	-	≤0.2	26.0	0.85	64
Bluegill	≤0.4	-	≤0.4	26.5	1.1	86
Bluegill	≤0.2	-	≤0.2	25.1	0.40	59
Pumpkinseed	≤0.3	-	≤0.3	26.0	0.10	65
Shiners	<3	-	<3	25.6	1.6	11
Brown Bullhead	≤0.2	-	≤0.2	19.4	0.07	134
Carp	4.1	2.7	6.8	31.2	7.3	2,680
Carp	≤0.3	-	<0.3	20.9	0.17	2,885
Carp	2.2	1.2	3.4	30.9	4.8	1,884
Carp	0.55	0.53	1.1	21.7	0.24	3,481

Source: EDI, 1985(b)

Table 3-38. *Fish Data - 1992 RI.*

Fish Sample	#	Length (mm)	Mass (g)	Percent Lipids	Percent Moisture	Wet Weight Concentration (mg/kg)						
						Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260
UPSTREAM												
Golden Shiner (Whole Fish)	3	65	7	0.5 %	N/A	0.1 U	0.2 U	0.1 U	0.1 U	0.86 JN	0.1 U	0.1 U
Longnose Dace (Whole Fish)	20	17 - 61	10	0.1 %	N/A	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
White Sucker Juv. (Whole Fish)	26	32 - 47	19	0.1 %	N/A	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pumpkinseed #1 (Edible Portion)	1	95	11	0.1 %	N/A	0.5 U	1.0 U	0.5 U	0.5 U	2.4	0.5 U	0.5 U
Pumpkinseed #2 (Edible Portion)	1	77	8.5	0.1 %	N/A	0.1 U	0.2 U	0.1 U	0.1 U	1.7	0.1 U	0.1 U
Pumpkinseed #3 (Edible Portion)	1	84	9.5	0.1 %	N/A	0.1 U	0.2 U	0.1 U	0.1 U	0.11 J	0.1 U	0.1 U
OUTFALL												
Golden Shiner #1 (Whole Fish)	1	186	83	0.1 %	79.7 %	0.1 U	0.2 U	0.1 U	0.1 U	0.19	0.1 U	0.1 U
Golden Shiner #2 (Whole Fish)	1	96	12	0.5 %	N/A	0.1 U	0.2 U	0.1 U	0.1 U	0.38	0.1 U	0.1 U
Dace (Whole Fish)	25	30 - 61	25	0.2 %	N/A	0.1 U	0.2 U	0.1 U	0.1 U	0.24	0.1 U	0.1 U
White Sucker #3 (Whole Fish)	1	120	17	0.2 %	N/A	0.1 U	0.2 U	0.1 U	0.1 U	0.82	0.1 U	0.23 JN

RACER0060748

Table 3-38. *Fish Data - 1992 RI.*

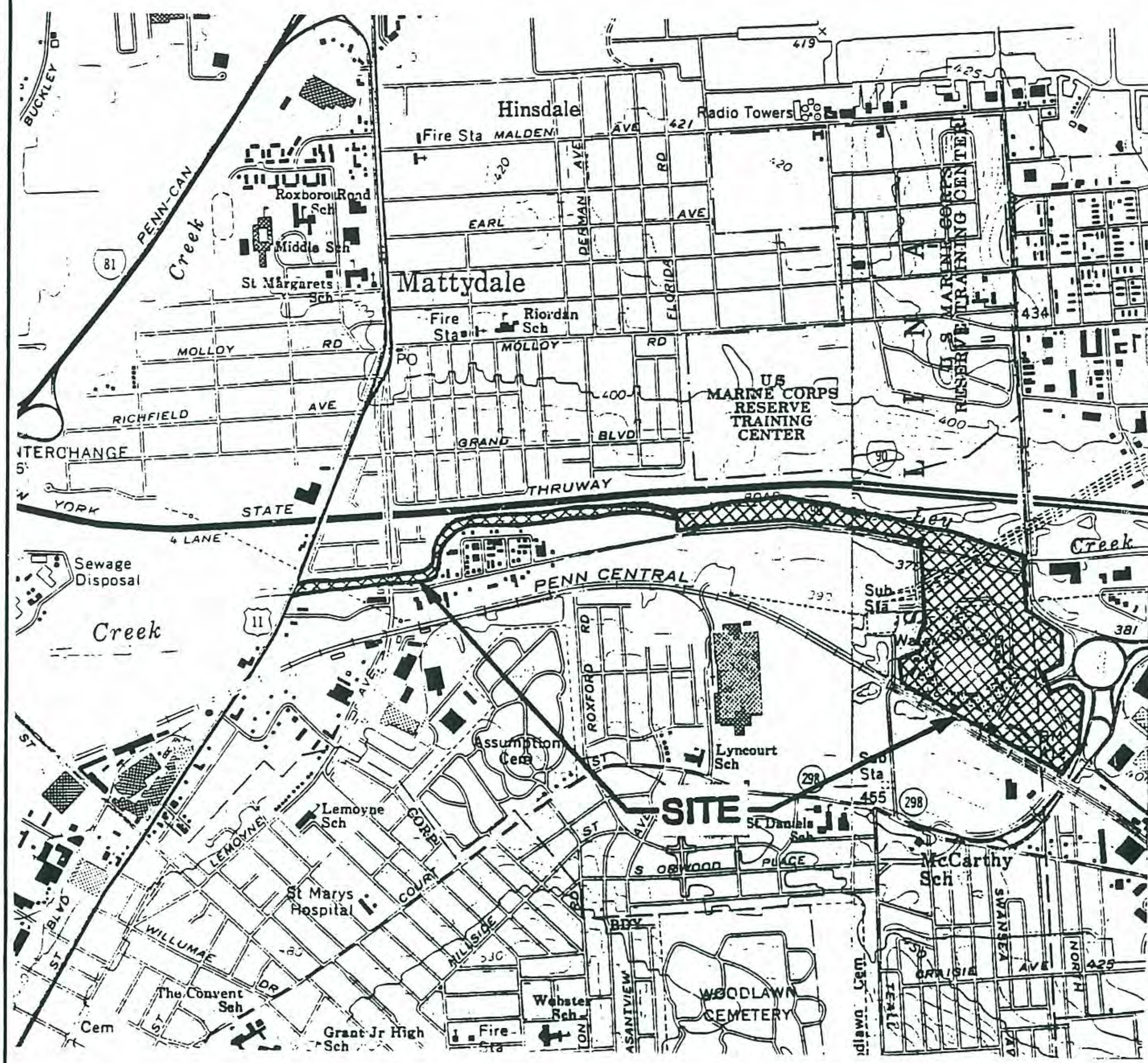
Fish Sample	#	Length (mm)	Mass (g)	Percent Lipids	Percent Moisture	Wet Weight Concentration (mg/kg)						
						Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260
DOWNSTREAM												
Dace (Whole Fish)	14	32 - 80	22	0.5 %	N/A	0.1 U	0.2 U	0.1 U	0.1 U	0.87	0.1 U	0.33 JN
White Sucker #6 (Whole Fish)	1	120	19	0.1 % J	N/A	0.1 U	0.2 U	0.1 U	0.1 U	0.46 J	0.1 U	0.1 U
Carp #1 (Whole Fish)	1	550	2,727	2.3 %	76.0 %	0.1 U	0.2 U	0.1 U	0.1 U	0.47	0.1 U	0.7 J
Carp #4 (Whole Fish)	1	508	2,386	1.2 %	77.8 %	0.1 U	0.2 U	0.1 U	0.1 U	1.1	0.1 U	0.35
Carp #2 (Filet)	1	545	2,727	1.1 %	73.3 %	0.1 U	0.2 U	0.1 U	0.1 U	0.11	0.1 U	0.1 U
Carp #3 (Filet)	1	660	4,091	3.0 %	72.6 %	0.1 U	0.2 U	0.1 U	0.1 U	0.2	0.1 U	0.1 U
Pumpkinseed #1 (Edible Portion)	1	120	24	0.1 %	N/A	0.1 U	0.2 U	0.1 U	0.1 U	0.32	0.1 U	0.1 U

N/A Insufficient sample volume for analysis.
U Not detected at the indicated quantitation limit.
J Detected results are estimated.
UJ Detection limits are estimated.
JN Detected results are presumptively present at an approximated quantity.

RACER0060749

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\ADS\072.DWG SF:1

FIGURE 1-1



GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

QUADRANGLE LOCATION

SITE LOCATION MAP

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

FILE NO. 4966.21535.072
DATE: JANUARY 2000

SCALE: 1:24000

PLOT DATE: 1/27/00

O'BRIEN & GERE ENGINEERS INC.

RACER0060750

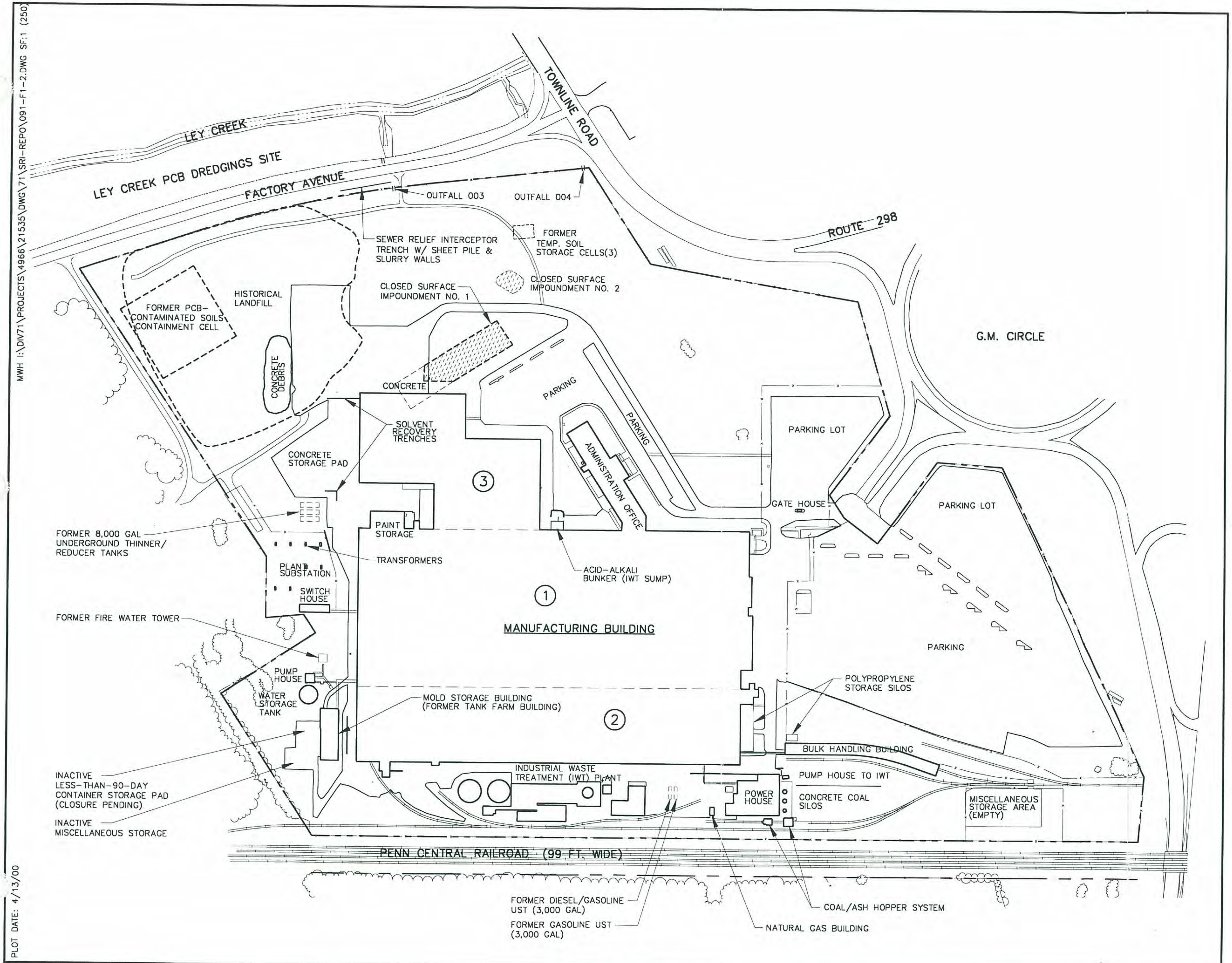


FIGURE 1-2

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

FACILITY PLAN

FILE NO. 4966.21535.091
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS INC.

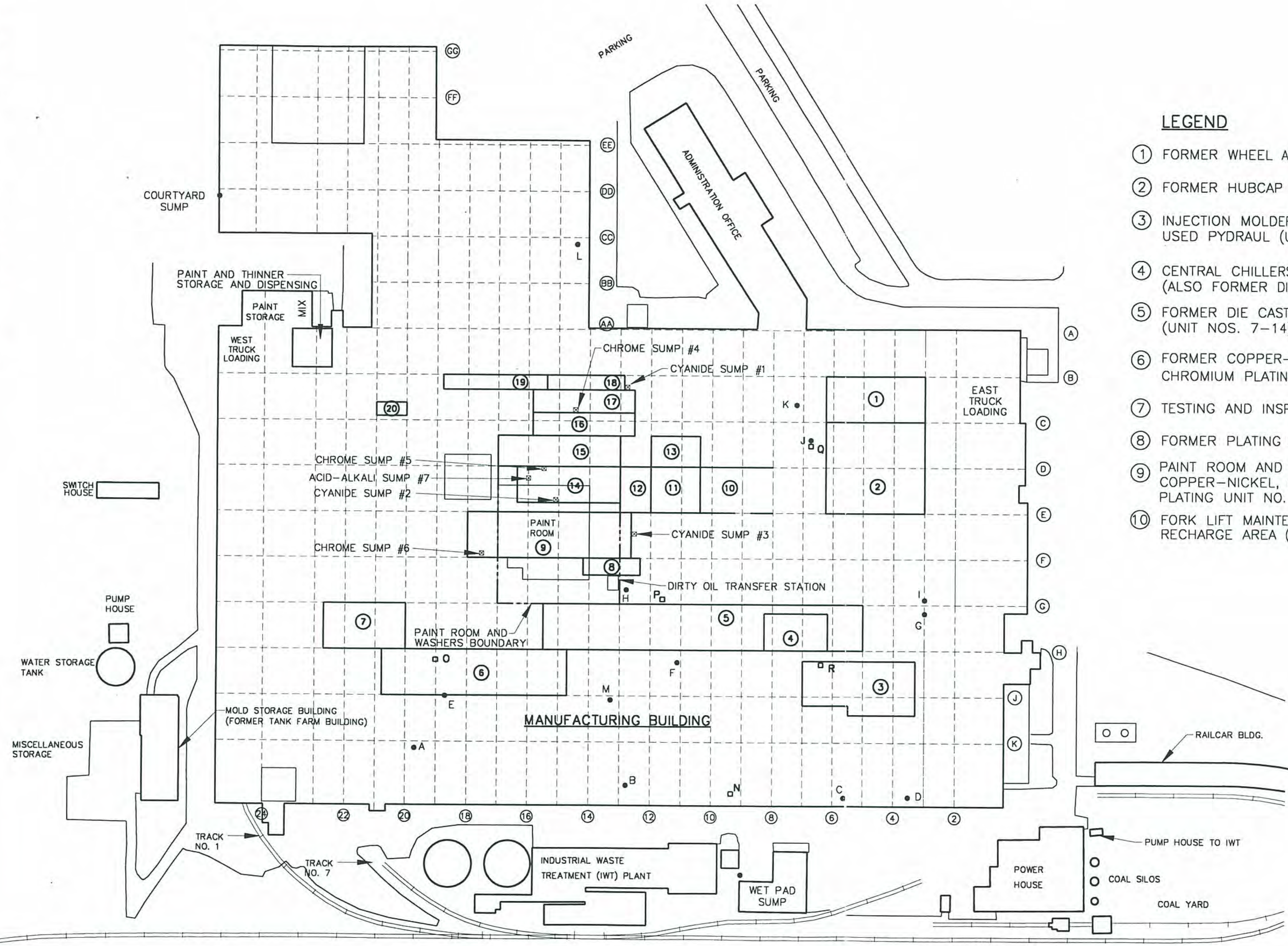
MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\091-F1-2.DWG SF:1 (250)

PLOT DATE: 4/13/00

RACER0060751

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\092-F1-3.DWG SF:1 (150)

FIGURE 1-3



LEGEND

1. FORMER WHEEL AND DISK PRESS LINES
2. FORMER HUBCAP PRESS LINES
3. INJECTION MOLDERS WHICH USED PYDRAUL (UNIT NOS. 7–14)
4. CENTRAL CHILLERS (3) (ALSO FORMER DIE CAST AREA)
5. FORMER DIE CASTING AREA (UNIT NOS. 7–14)
6. FORMER COPPER-NICKEL, NICKEL-CHROMIUM PLATING UNIT NO. 8
7. TESTING AND INSPECTION AREA
8. FORMER PLATING UNIT NO. 9
9. PAINT ROOM AND WASHERS FORMER COPPER-NICKEL, NICKEL-CHROMIUM PLATING UNIT NO. 6
10. FORK LIFT MAINTENANCE AND BATTERY RECHARGE AREA (REMOVED)

LEGEND CON'T

11. FORK LIFT MAINTENANCE AND BATTERY RECHARGE AREA (REMOVED)
12. KOLENE UNIT (REMOVED)
13. FORMER CHEMICAL AND ANODE CRIB
14. PAINT ROOM AND WASHERS FORMER COPPER-NICKEL, NICKEL-CHROMIUM PLATING UNIT NO. 5
15. FORMER NICKEL-CHROME PLATING UNIT NO. 4
16. FORMER CHROME PLATING UNIT NO. 3
17. FORMER CHROME PLATING UNIT NO. 2
18. FORMER NICKEL-CHROMIUM PLATING UNIT NO. 1
19. FORMER CHROME PLATING UNIT NO. 7
20. FORMER AUTOMATIC PAINT STRIPPER

A ● HYDRAULIC OIL SUMP (OUT OF SERVICE)

P ▫ HYDRAULIC OIL UNDERGROUND STORAGE TANK (REMOVED)

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

HISTORIC PLATING / DIE CASTING / PRESS LINES OPERATION LAYOUT

0 150 300
SCALE IN FEET

FILE NO. 4966.21535.092
DATE: APRIL 2000

O'BRIEN & GERE ENGI[NEERS, IN]C.

RACER0060752

PLOT DATE: 4/13/00

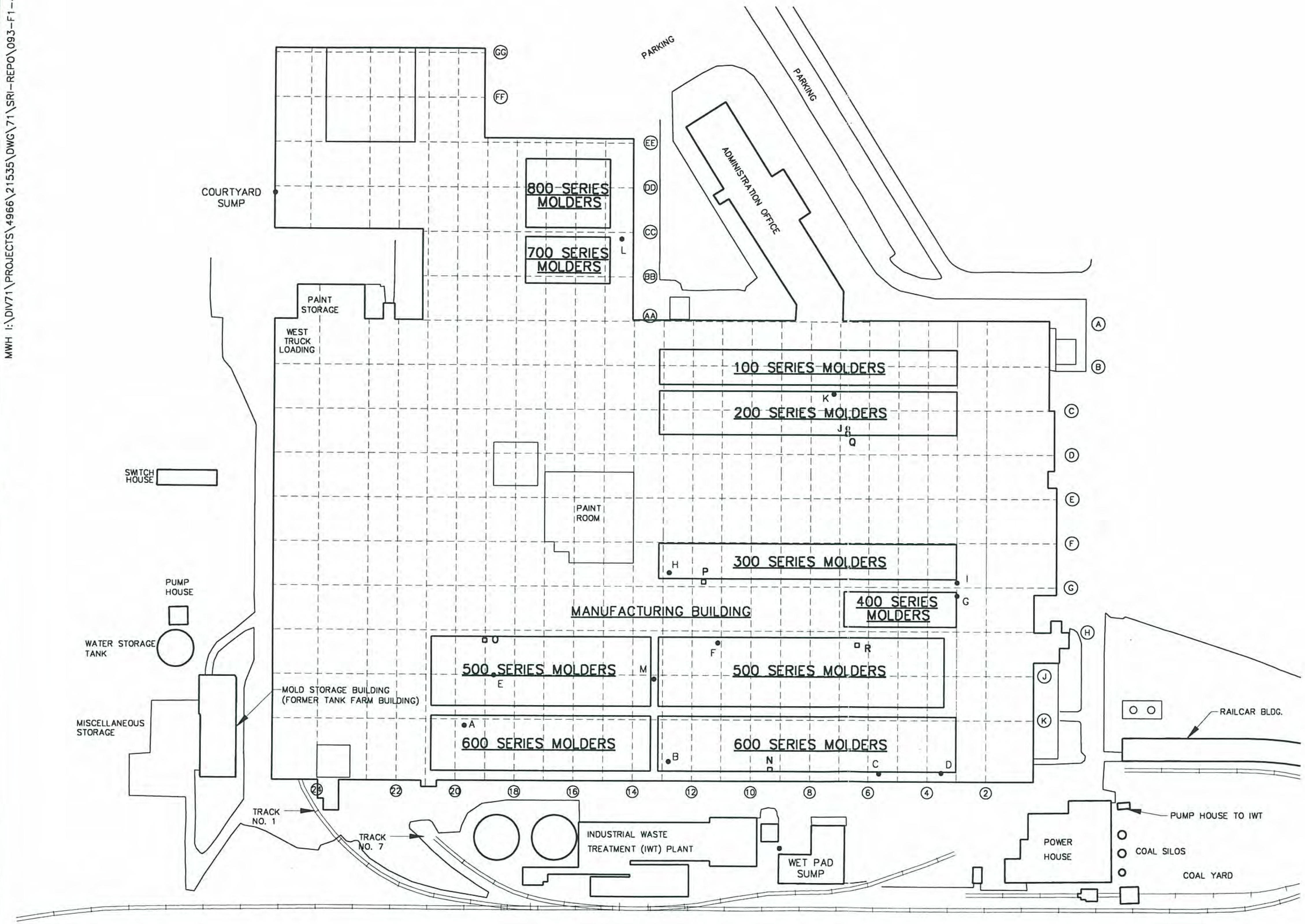


FIGURE 1-4

LEGEND

- A ● HYDRAULIC OIL SUMP (OUT OF SERVICE)
- P ▫ HYDRAULIC OIL UNDERGROUND STORAGE TANK (REMOVED)

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

HISTORIC INJECTION MOLDING OPERATION LAYOUT

0 150 300
SCALE IN FEET

FILE NO. 4966.21535.093
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060753

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\093-F1-4.DWG SF:1 (150)

PLOT DATE: 4/13/00

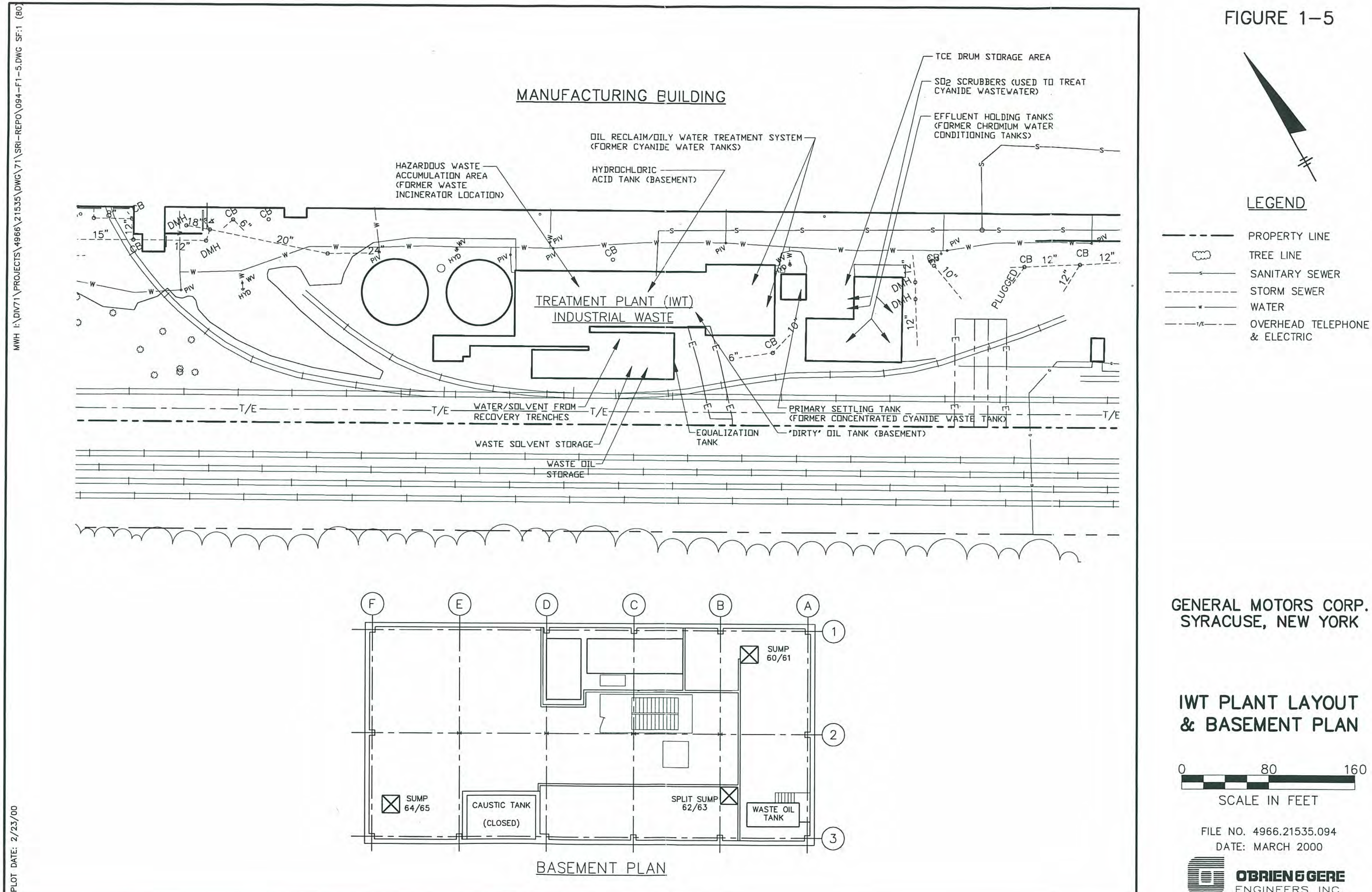


FIGURE 1-5

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

IWT PLANT LAYOUT & BASEMENT PLAN

FILE NO. 4966.21535.094
DATE: MARCH 2000

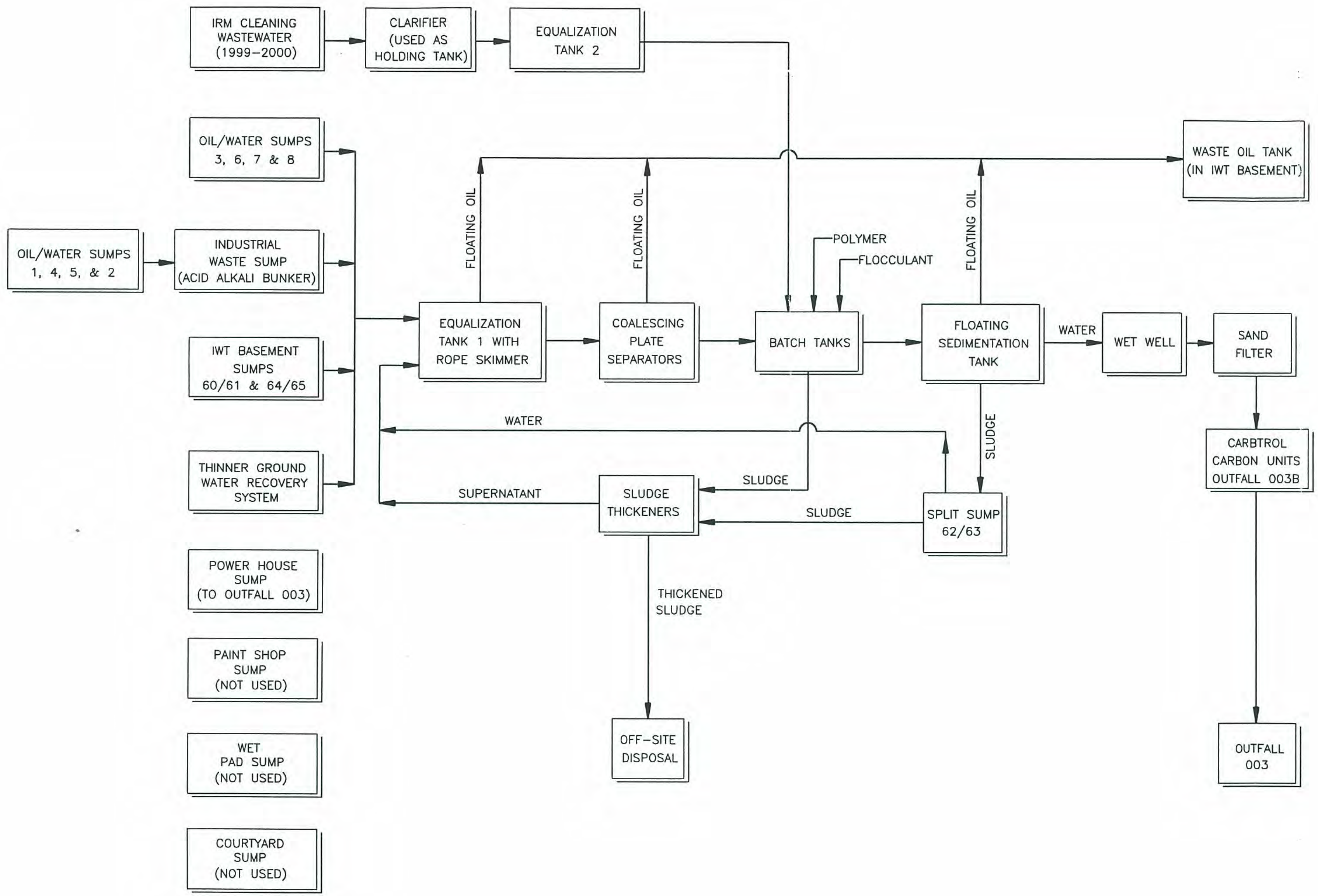
O'BRIEN & GERE ENGINEERS INC.

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\094-F1-5.DWG SF:1 (80)

PLOT DATE: 2/23/00

RACER0060754

FIGURE 1-6



MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\095-F1-6.DWG SF:

PLOT DATE: 2/23/00

LEGEND

FLOW DIRECTION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

INDUSTRIAL WASTE TREATMENT PLANT PROCESS SCHEMATIC

NOT TO SCALE

FILE NO. 4966.21535.095
DATE: MARCH 2000

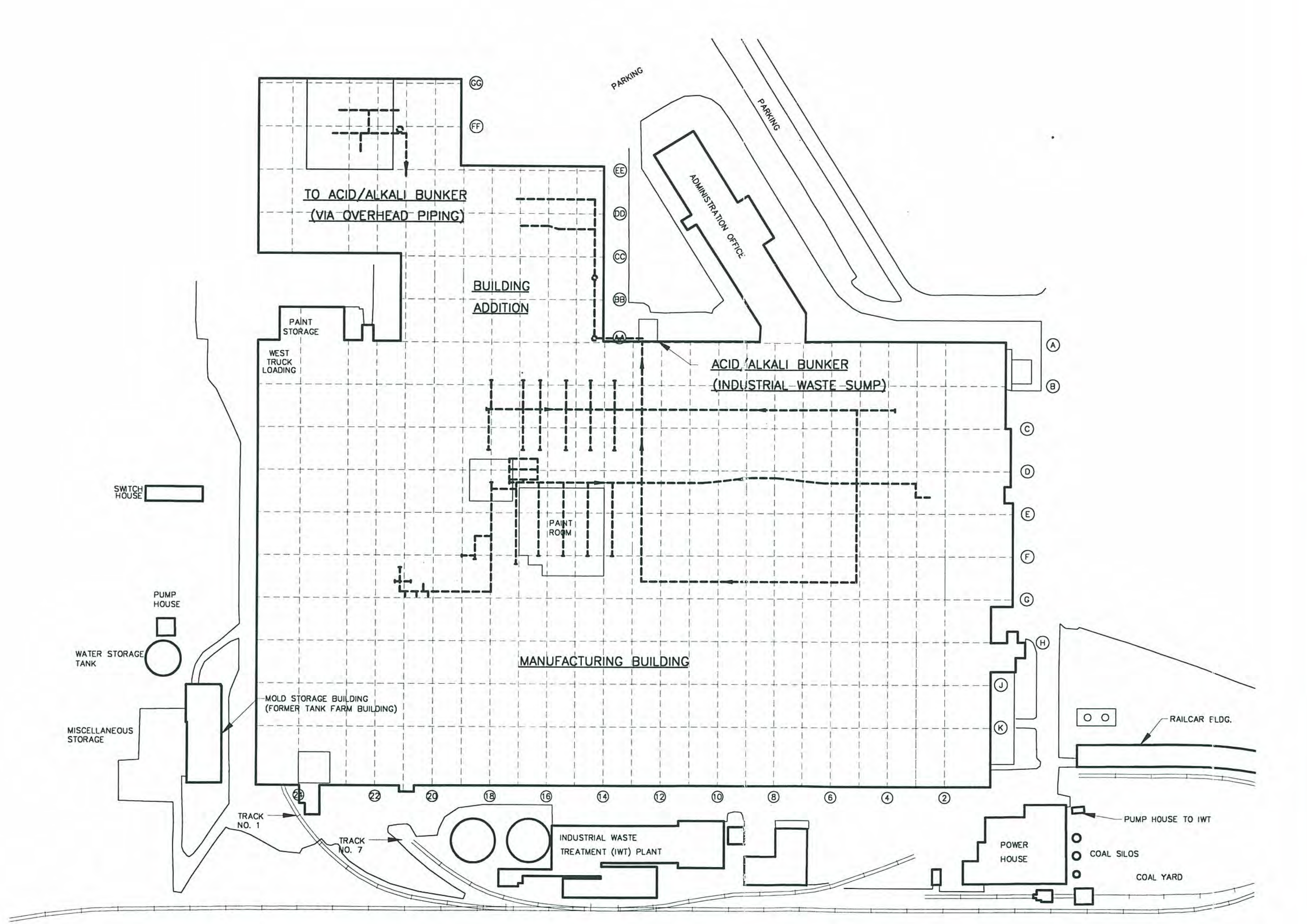
O'BRIEN & GERE ENGINEERS INC.

RACER0060755

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\096-F1-7.DWG SF:1 (150)

PLOT DATE: 2/23/00

FIGURE 1-7



LEGEND

FLOW DIRECTION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

EXISTING PROCESS SEWER SYSTEM

0 150 300
SCALE IN FEET

FILE NO. 4966.21535.096
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060756

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\097-F1-8.DWG SF:1 (240)

PLOT DATE: 4/13/00

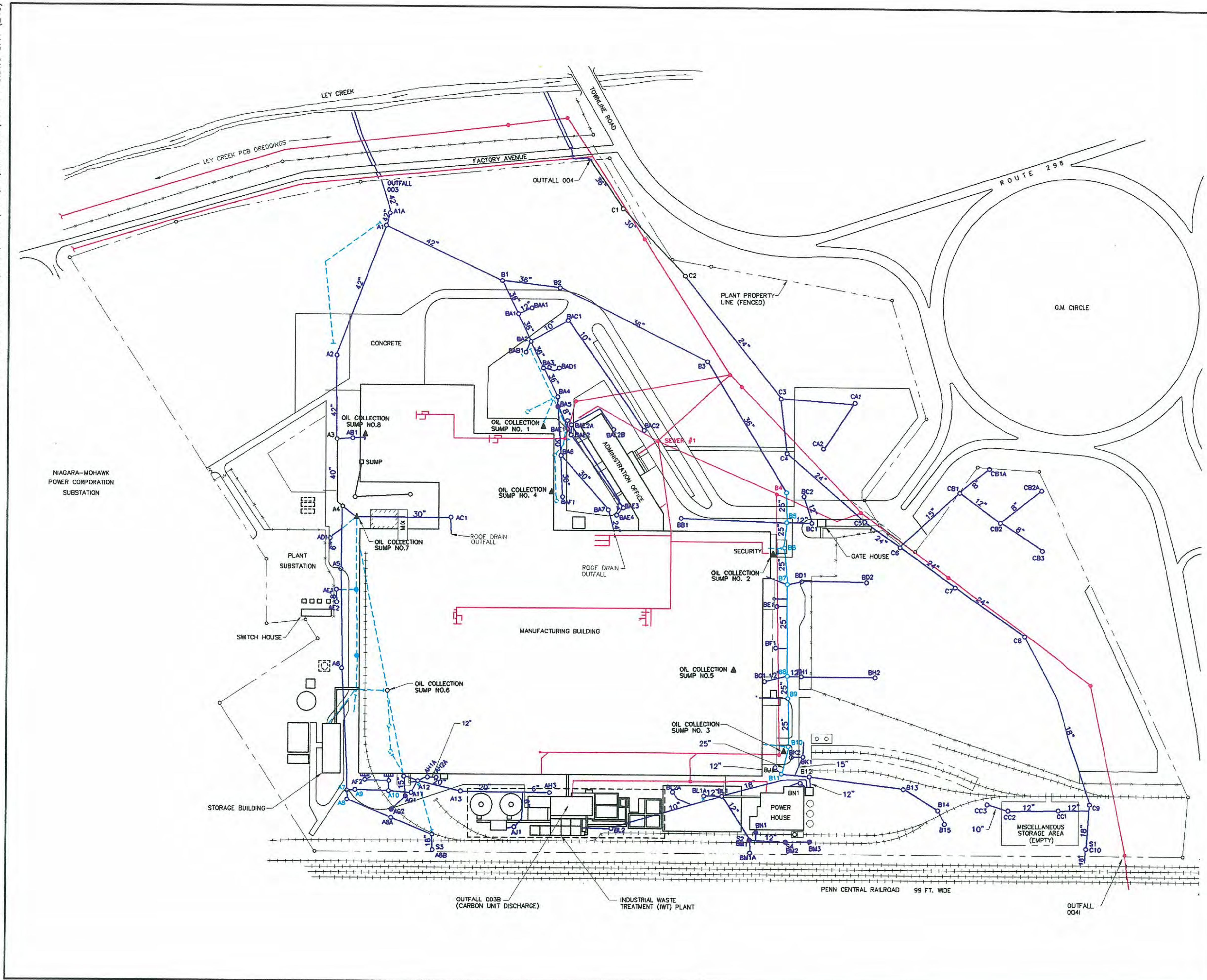


FIGURE 1-8

LEGEND

- ACTIVE STORM SEWER
- PLUGGED STORM SEWER
- SLIP LINED STORM SEWER
- INSITUFORMED STORM SEWER
- SANITARY SEWER
- PROPERTY LINE
- OIL COLLECTION SUMP
- MANHOLE
- BURIED MANHOLE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

STORM AND SANITARY SEWERS

0 240 480

FILE NO. 4966.21535.097
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS INC.

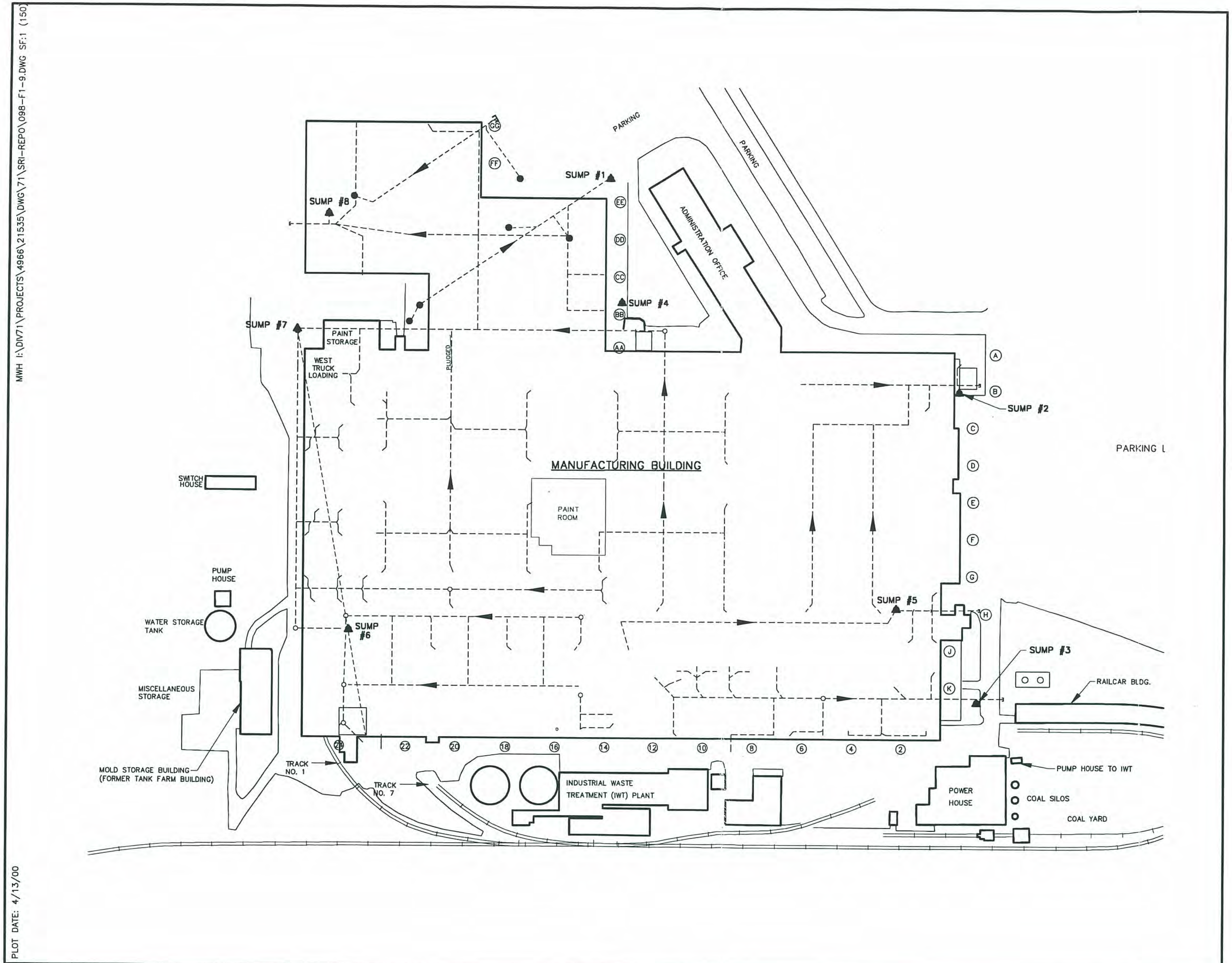


FIGURE 1–9

LEGEND

- ▲ OIL/WATER COLLECTION SUMP
- INACTIVE STORM SEWER
- MANHOLE
- CAPPED PIPE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

INACTIVE HISTORIC STORM SEWER LAYOUT

0 150 300
SCALE IN FEET

FILE NO. 4966.21535.091
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS INC.

RACER0060758

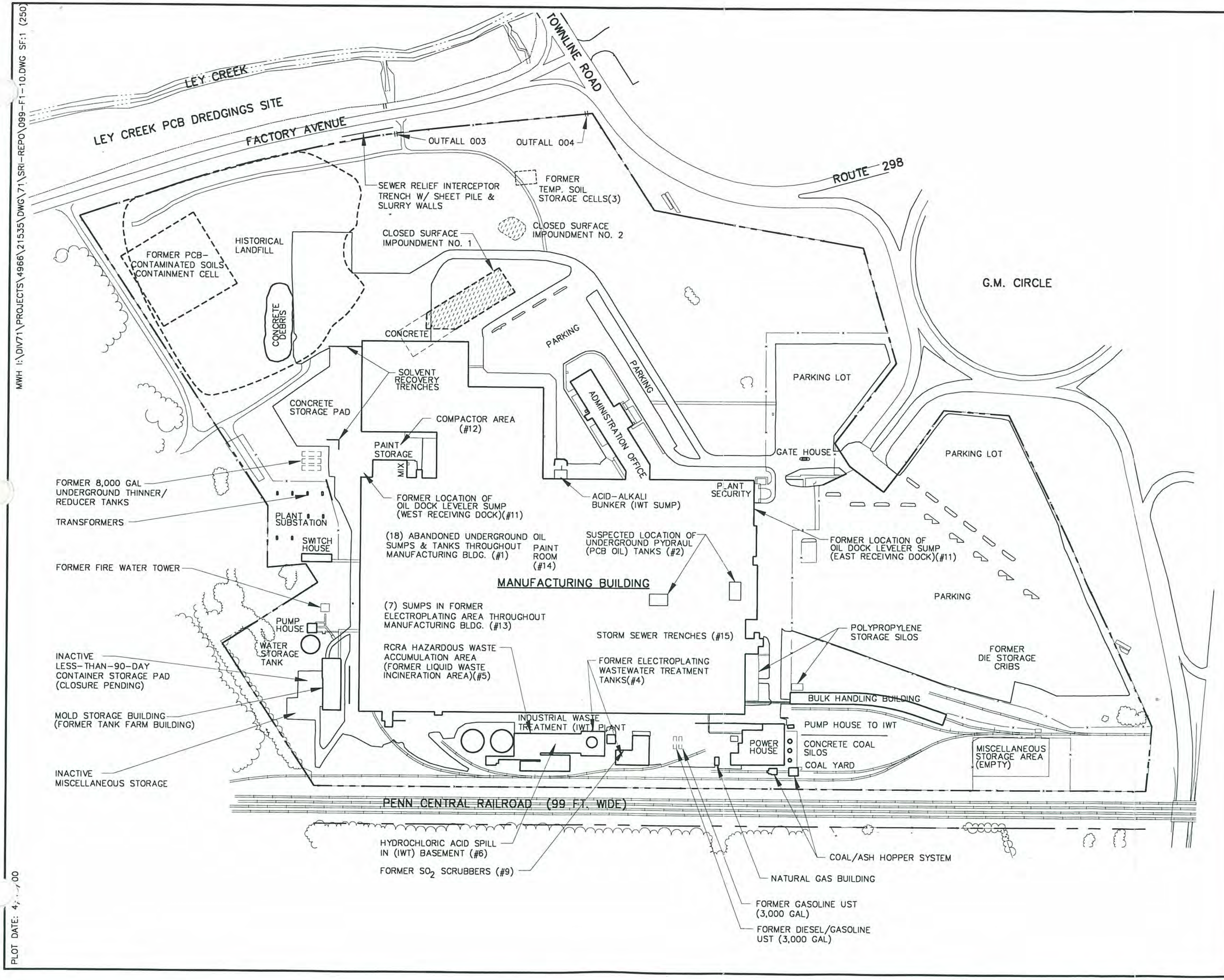


FIGURE 1-10

LEGEND

PROPERTY LINE

TREE LINE

APPROX. LOCATION

FENCE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

POTENTIAL AREAS OF CONCERN

0 250 500

SCALE IN FEET

FILE NO. 4966.21535.099

DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS INC.

RACER0060759

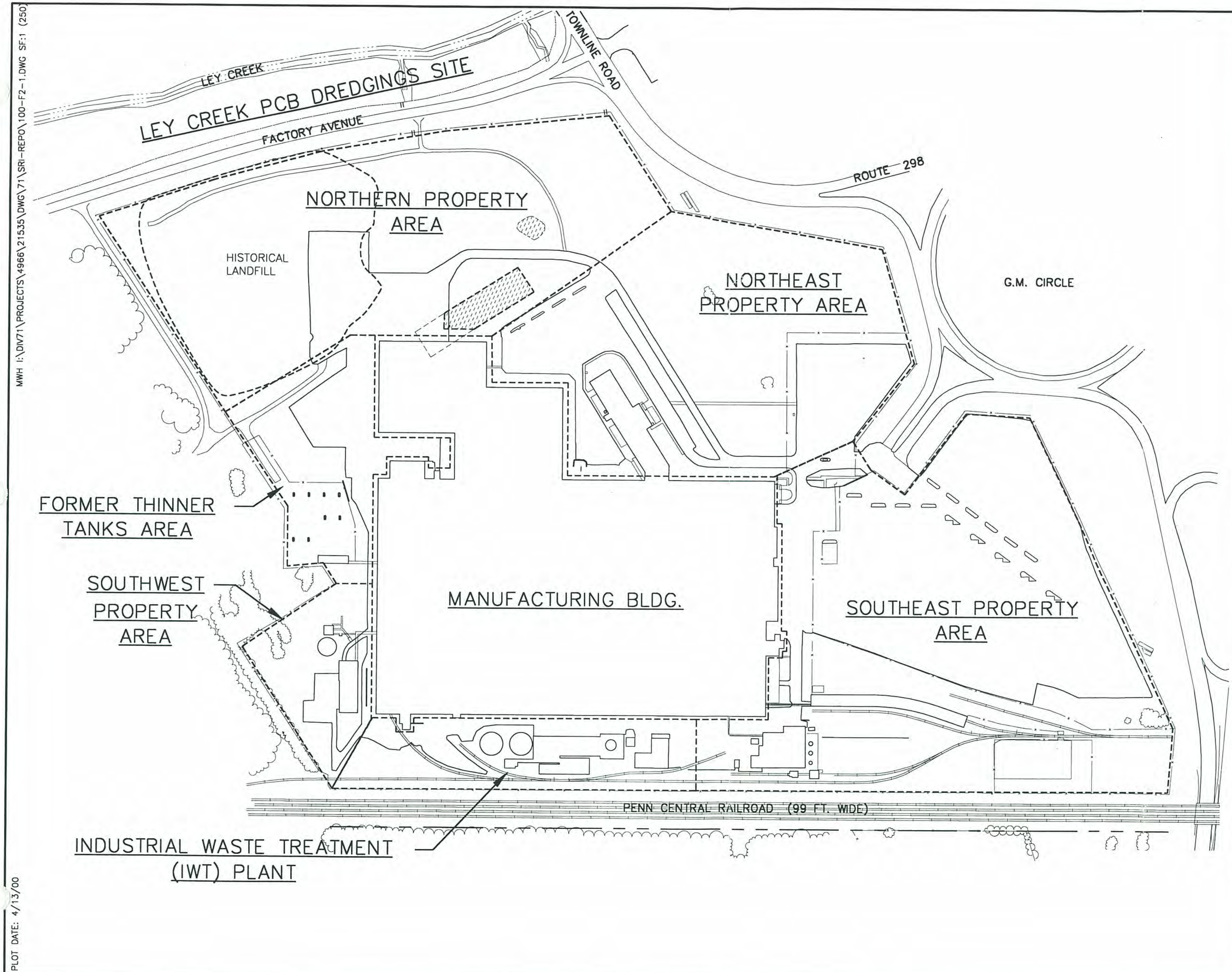


FIGURE 2-1

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

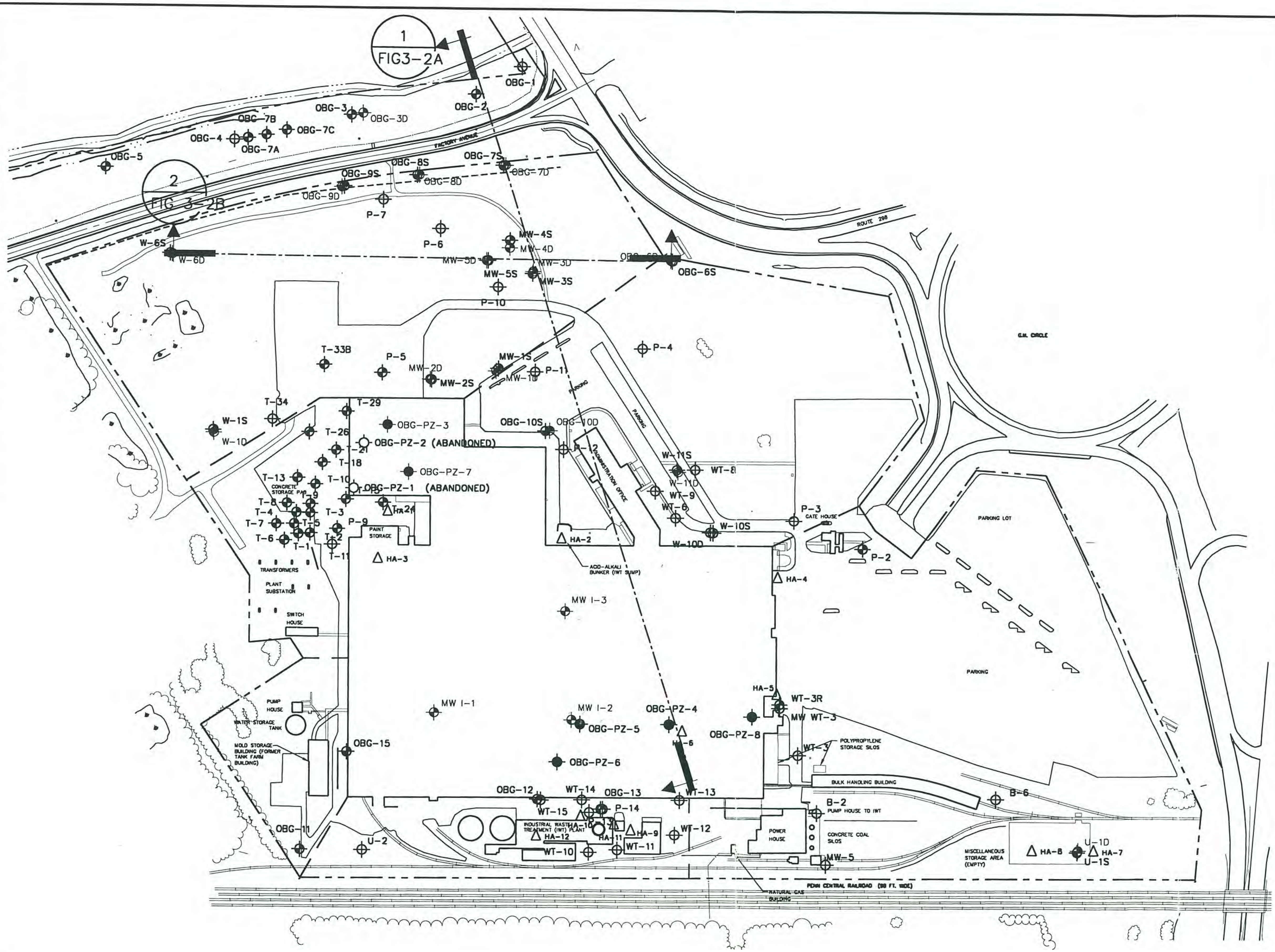
SITE SUB-AREAS

FILE NO. 4966.21535.100
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS INC.

RACER0060760

FIGURE 2-2



LEGEND

- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- PIEZOMETER
- PROPERTY BOUNDARY
- TREE LINE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

MONITORING WELL LOCATION PLAN

0 250 500
SCALE IN FEET

FILE NO. 4966.21535.129
DATE: APRIL 2000

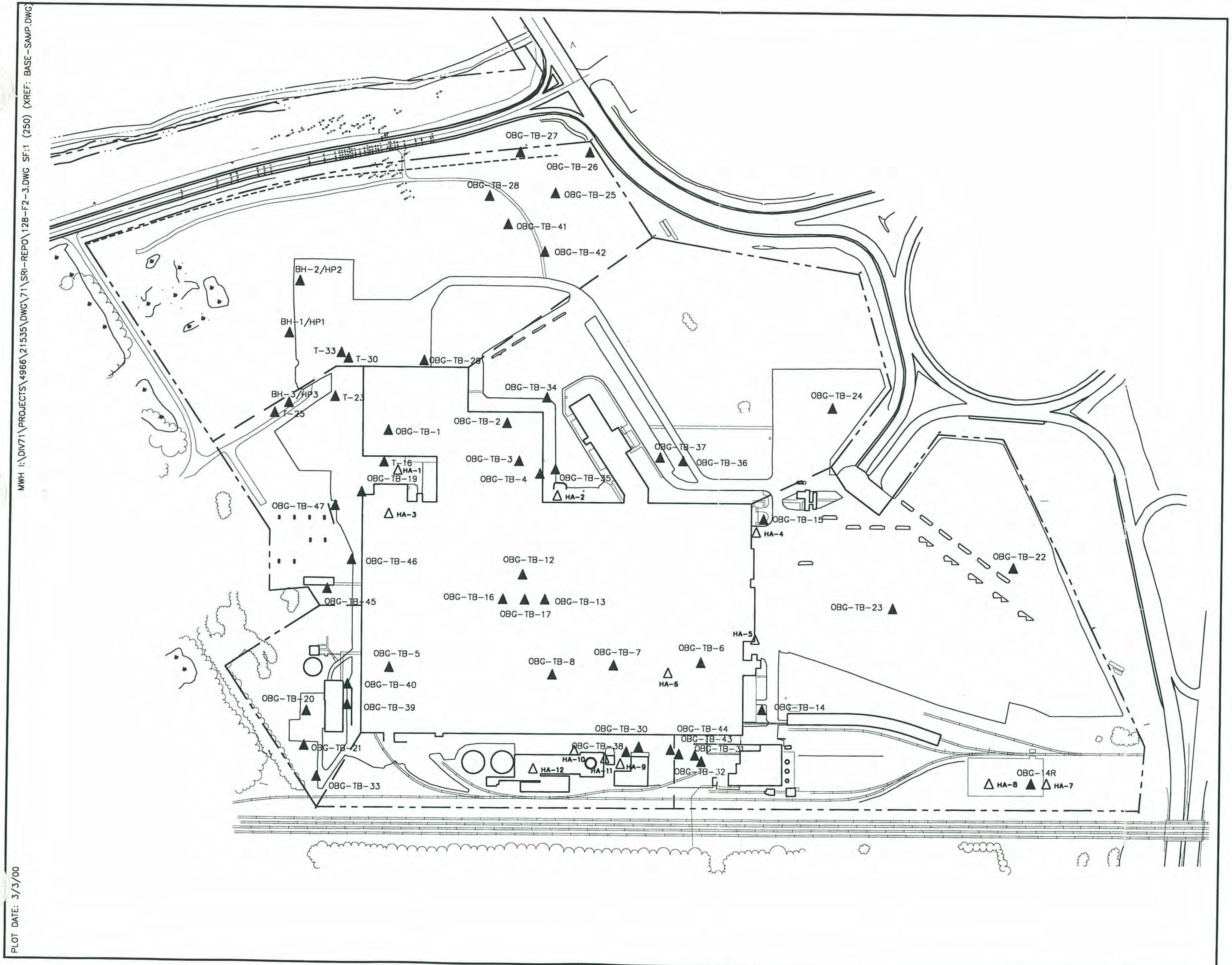
O'BRIEN & GERE ENGINEERS INC.

RACER0060781

PLOT DATE: 4/6/00

I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\129-F2-2.DWG SF:1 (250) (XREF: BASE-SAMP.DWG)

FIGURE 2-3



LEGEND

▲ SOIL BORING

PROPERTY BOUNDARY

TREE LINE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

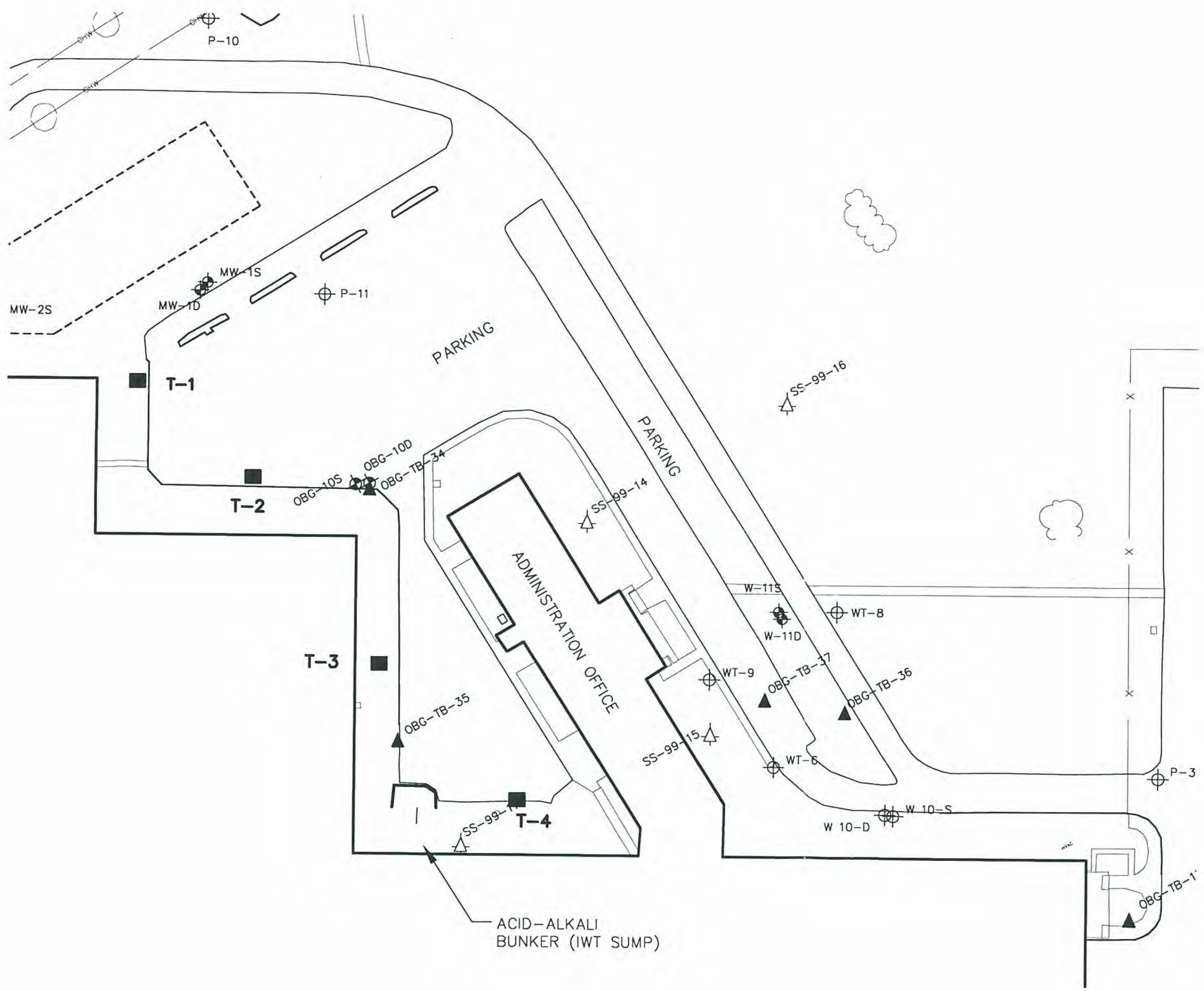
SOIL BORING
LOCATION PLAN

0 250 500
SCALE IN FEET

FILE NO. 4966.21535.128
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS INC.

RACER0060762



MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\101-F2-4.DWG SF:1 (100) (XREF: BASE-SAMP.DWG)

PLOT DATE: 3/1/00

FIGURE 2-4

LEGEND

T-2	MAY 1985 TRENCH LOCATION
	MONITORING WELL
	MONITORING WELL NOT SAMPLED
	SURFACE SOIL SAMPLE
	SOIL BORING
	PROPERTY LINE
	TREE LINE
	FENCE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

1985 TEST TRENCH LOCATION PLAN

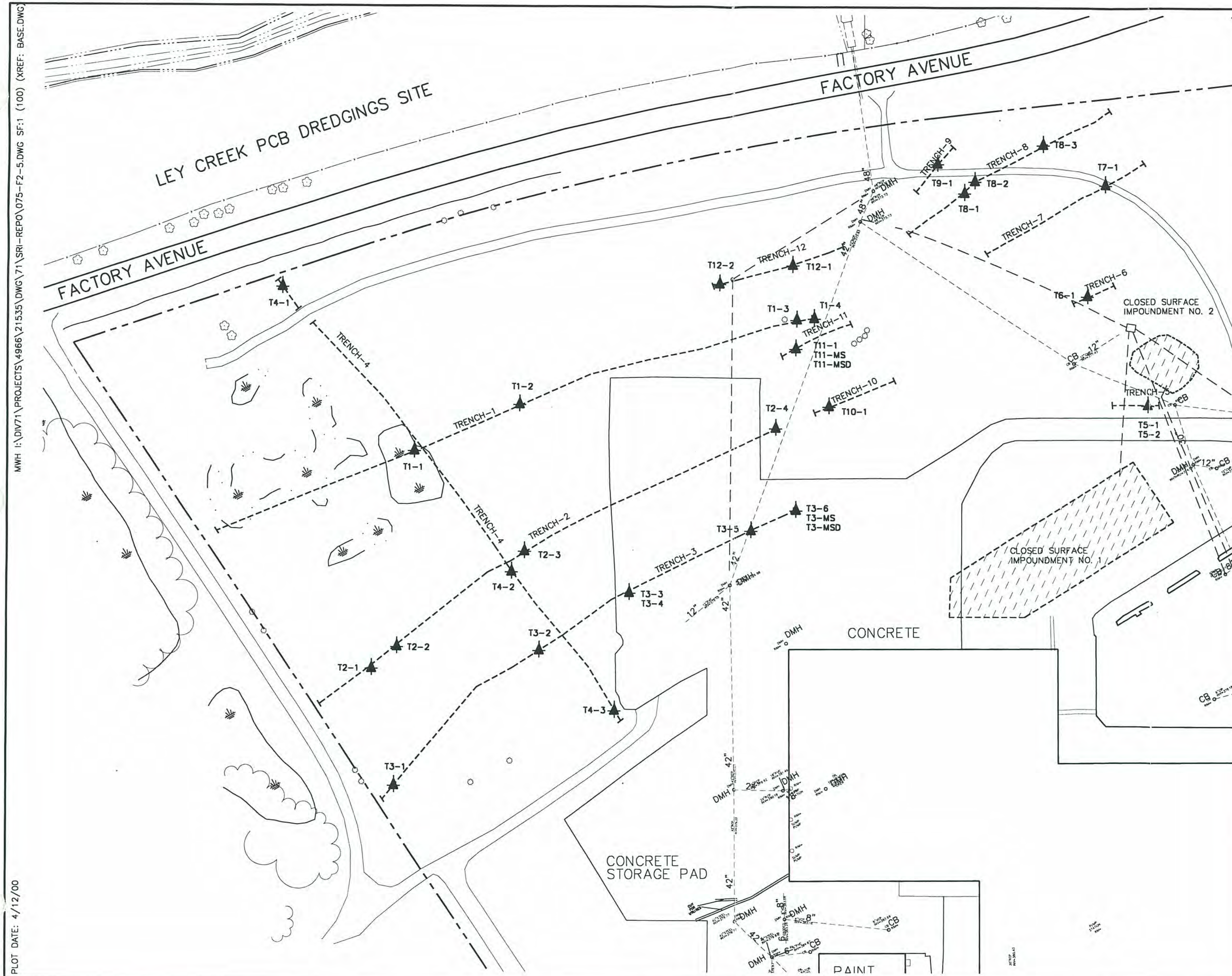
0 100 200
SCALE IN FEET

FILE NO. 4966.21535.101
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060763

FIGURE 2-5



LEGEND

- TEST TRENCH SOIL SAMPLE
- PROPERTY BOUNDARY
- TREE LINE
- 42" ACTIVE STORM SEWER
- ABANDONED STORM SEWER

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

1999 TEST TRENCH SAMPLING LOCATION PLAN

0 100 200
SCALE IN FEET

FILE NO. 4966.21535.075
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060764

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\076-F2-6.DWG SF:1 (250)

PLOT DATE: 2/23/00

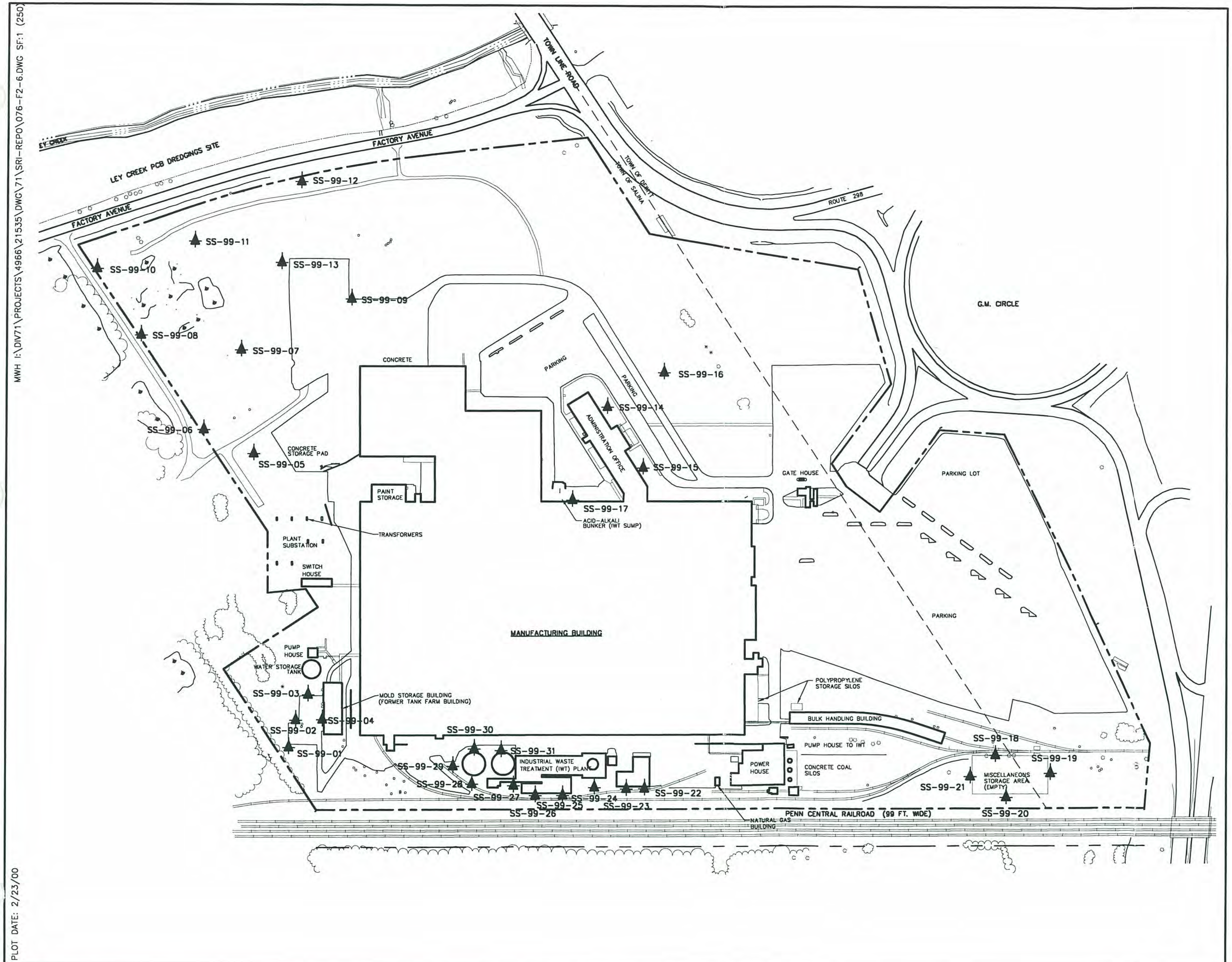


FIGURE 2-6

LEGEND

- SURFACE SOIL SAMPLE
- PROPERTY BOUNDARY
- TREE LINE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

SURFACE SOIL SAMPLING LOCATION PLAN

0 250 500
SCALE IN FEET

FILE NO. 4966.21535.076
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060765

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\102-F2-7.DWG SF:1 (2000)

PLOT DATE: 2/23/00

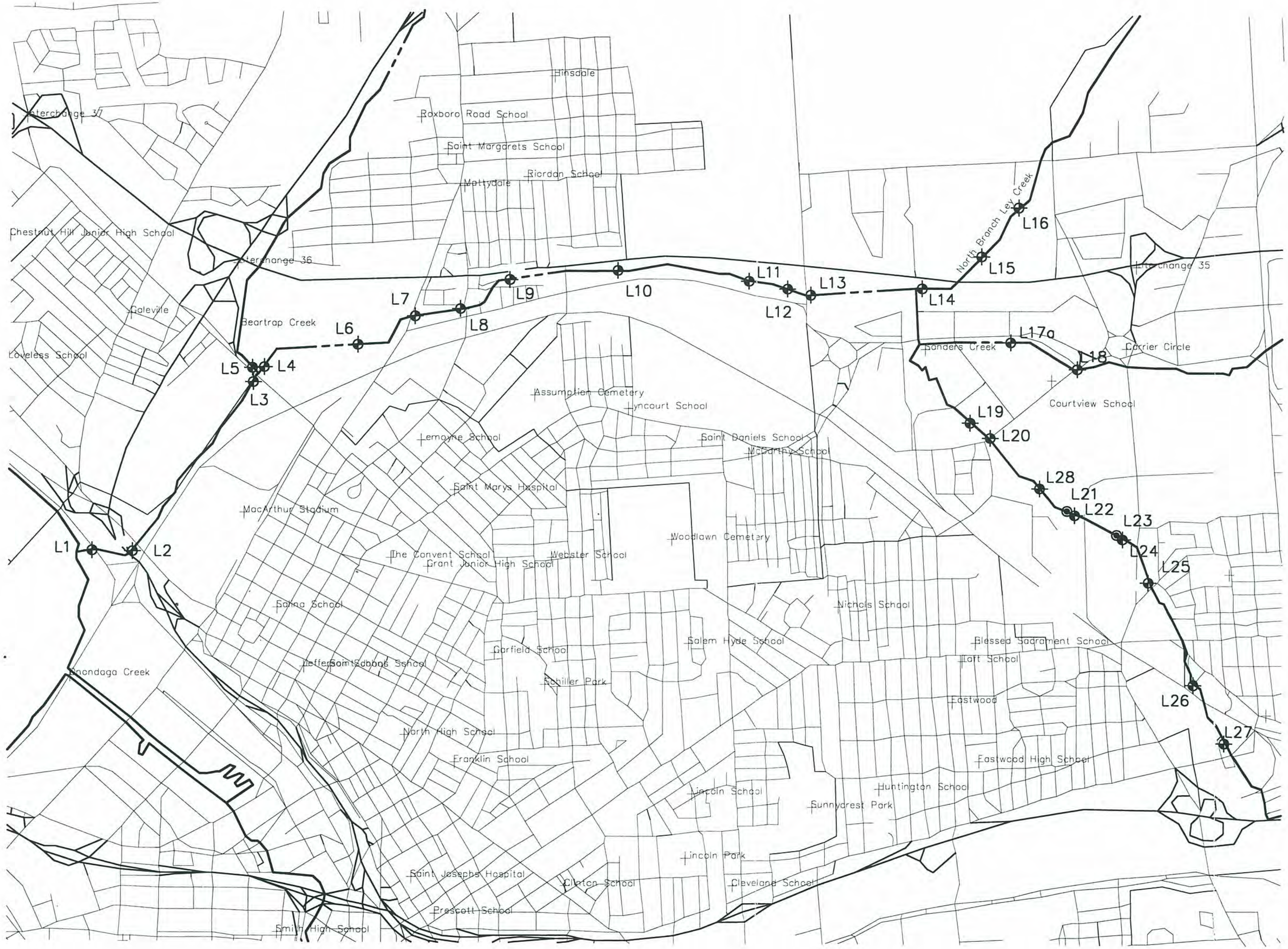


FIGURE 2–7

LEGEND

27 SEDIMENT SAMPLE LOCATION

21 SURFACE WATER SAMPLE LOCATION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

1996 NYSDEC LEY CREEK SURFACE WATER AND SEDIMENT SAMPLING LOCATION PLAN

0 2000 4000
SCALE IN FEET

FILE NO. 4966.21535.102
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060766

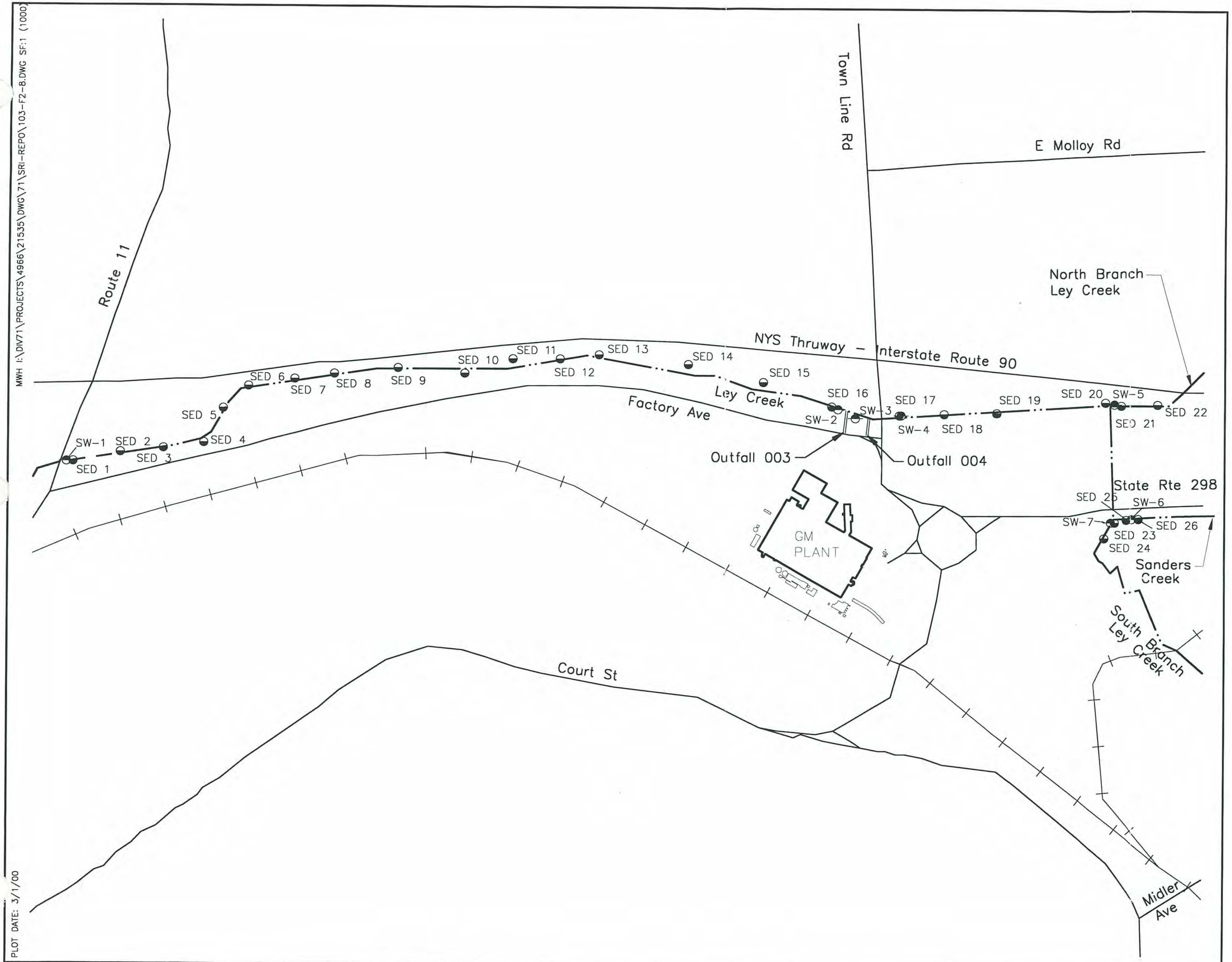


FIGURE 2-8

LEGEND

- SEDIMENT CORE SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

1998/1999 LEY CREEK SURFACE WATER AND SEDIMENT / SAMPLING LOCATION PLAN

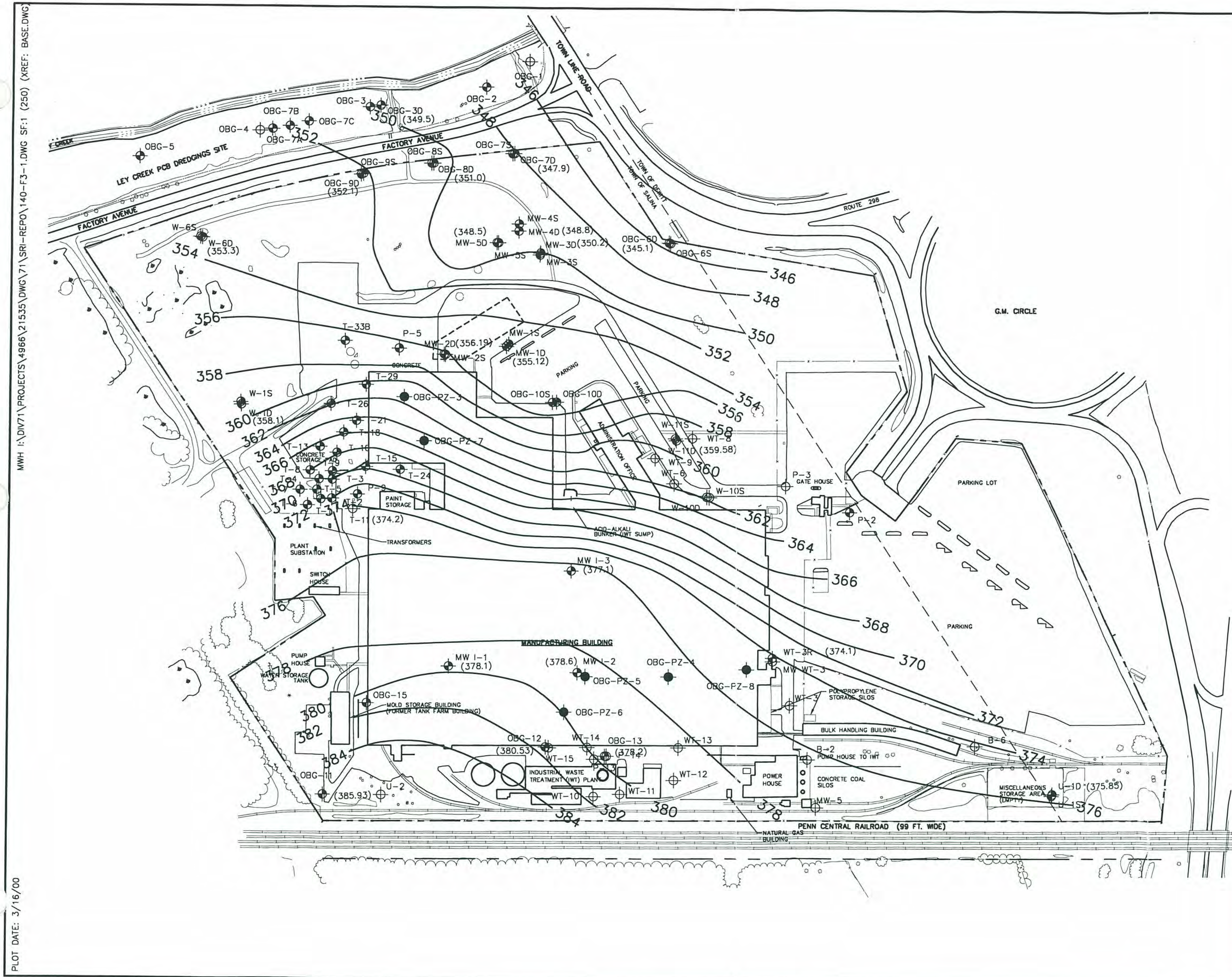
0 1000 2000
SCALE IN FEET

FILE NO. 4966.21535.103
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS INC.

RACER0060767

FIGURE 3-1



LEGEND

- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- PIEZOMETER
- PROPERTY BOUNDARY
- TREE LINE
- (379.90) TOP OF TILL ELEVATION
- ELEVATION CONTOUR

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

TOP OF TILL ELEVATION CONTOUR MAP

0 250 500
SCALE IN FEET

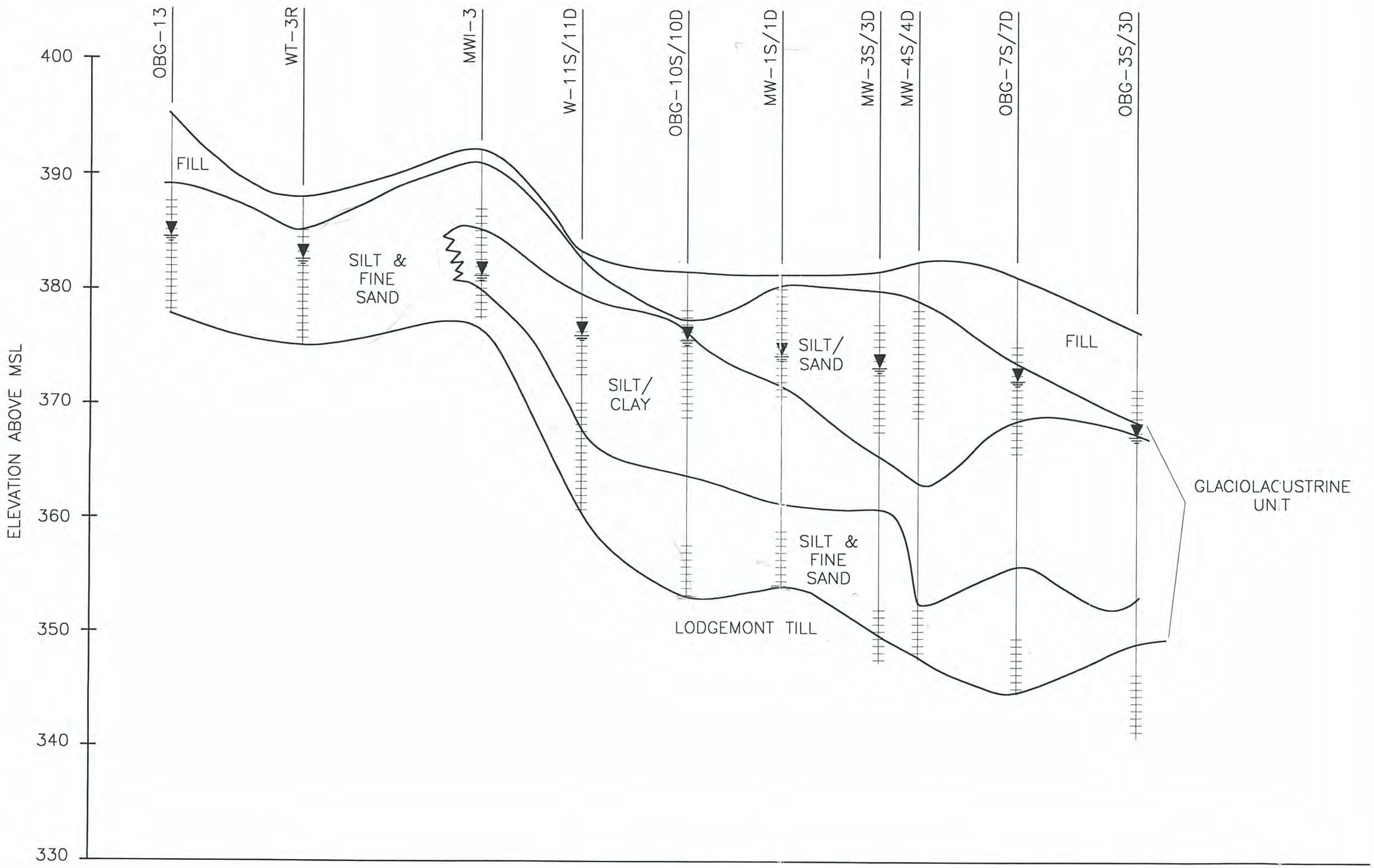
FILE NO. 4966.21535.140
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS INC.

RACER0060768

PWW I:\DIV71\PROJECTS\4966\21535\DWGS\71\SRI-REPORT\141.DWG SF:1

FIGURE 3-2A



SECTION 1 FIG2-2

SCALE: HORIZ. 1"=240'
VERT. 1"=10'

0 240 480
APPROX. HORIZ. SCALE IN FEET

0 10 20
APPROX. VERT. SCALE IN FEET

LEGEND

MONITORING WELL SCREENED INTERVAL

GROUND WATER ELEVATION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

GENERALIZED HYDROGEOLOGIC CROSS SECTION

SCALE AS NOTED
VERTICAL EXAGGERATION = 24X

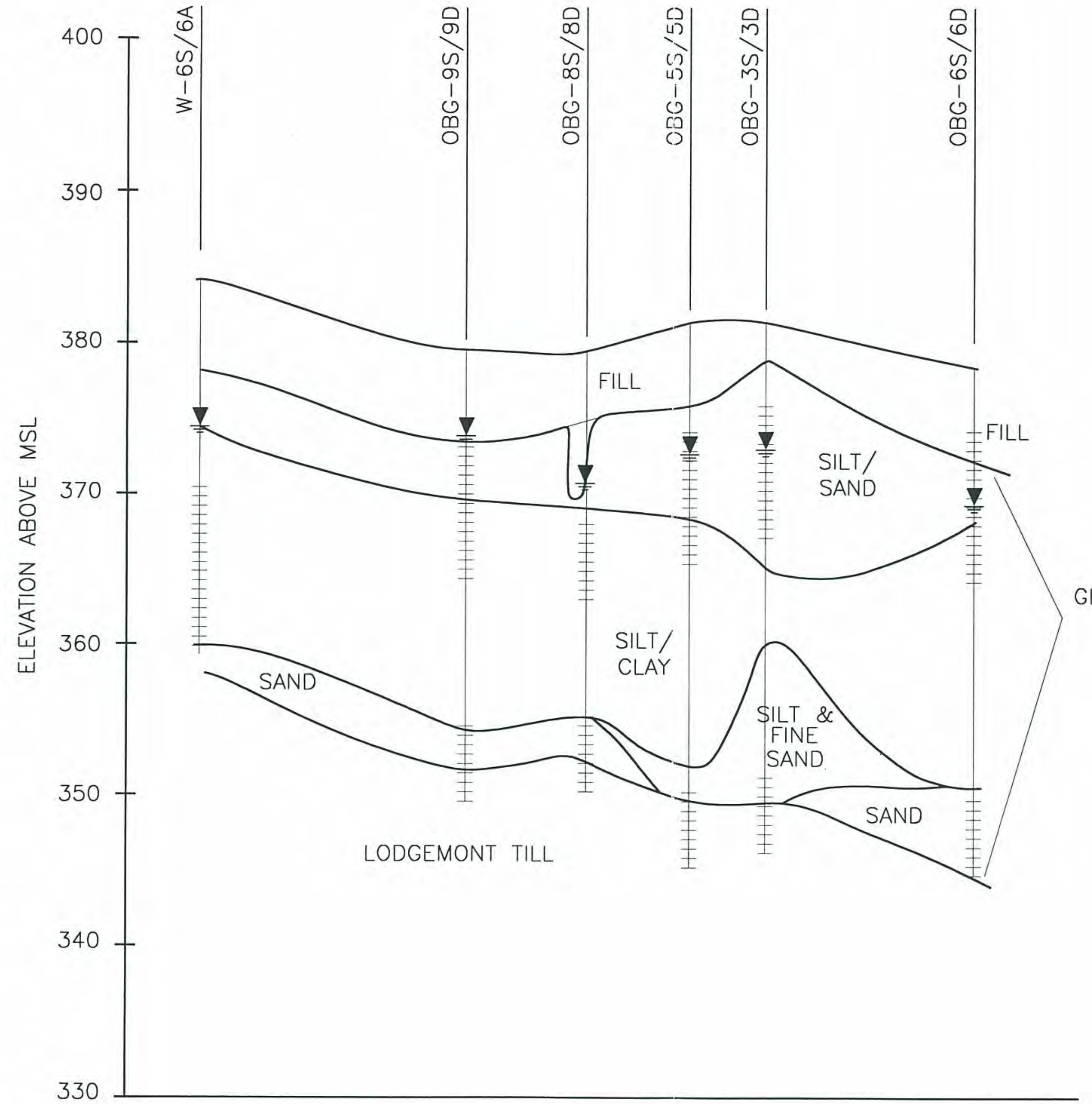
FILE NO. 4966.21535.141
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS INC.

PLOT DATE: 4/12/00 SYR PWW

PWW I:\DIV71\PROJECTS\4966\21535\DWGS\71\SRI-REPORT\148.DWG SF:1

FIGURE 3-2B



SECTION 2 FIG2-2

SCALE: HORIZ. 1"=240'
VERT. 1"=10'

0 240 480
APPROX. HORIZ. SCALE IN FEET

0 10 20
APPROX. VERT. SCALE IN FEET

LEGEND

MONITORING WELL SCREENED INTERVAL

GROUND WATER ELEVATION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

GENERALIZED HYDROGEOLOGIC CROSS SECTION

SCALE AS NOTED
VERTICAL EXAGGERATION = 24X

FILE NO. 4966.21535.148
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS INC.

PLOT DATE: 4/12/00 SYR PWW

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\126-F3-2.DWGSF:1 (250) (XREF: BASE.DWG)

PLOT DATE: 3/20/00

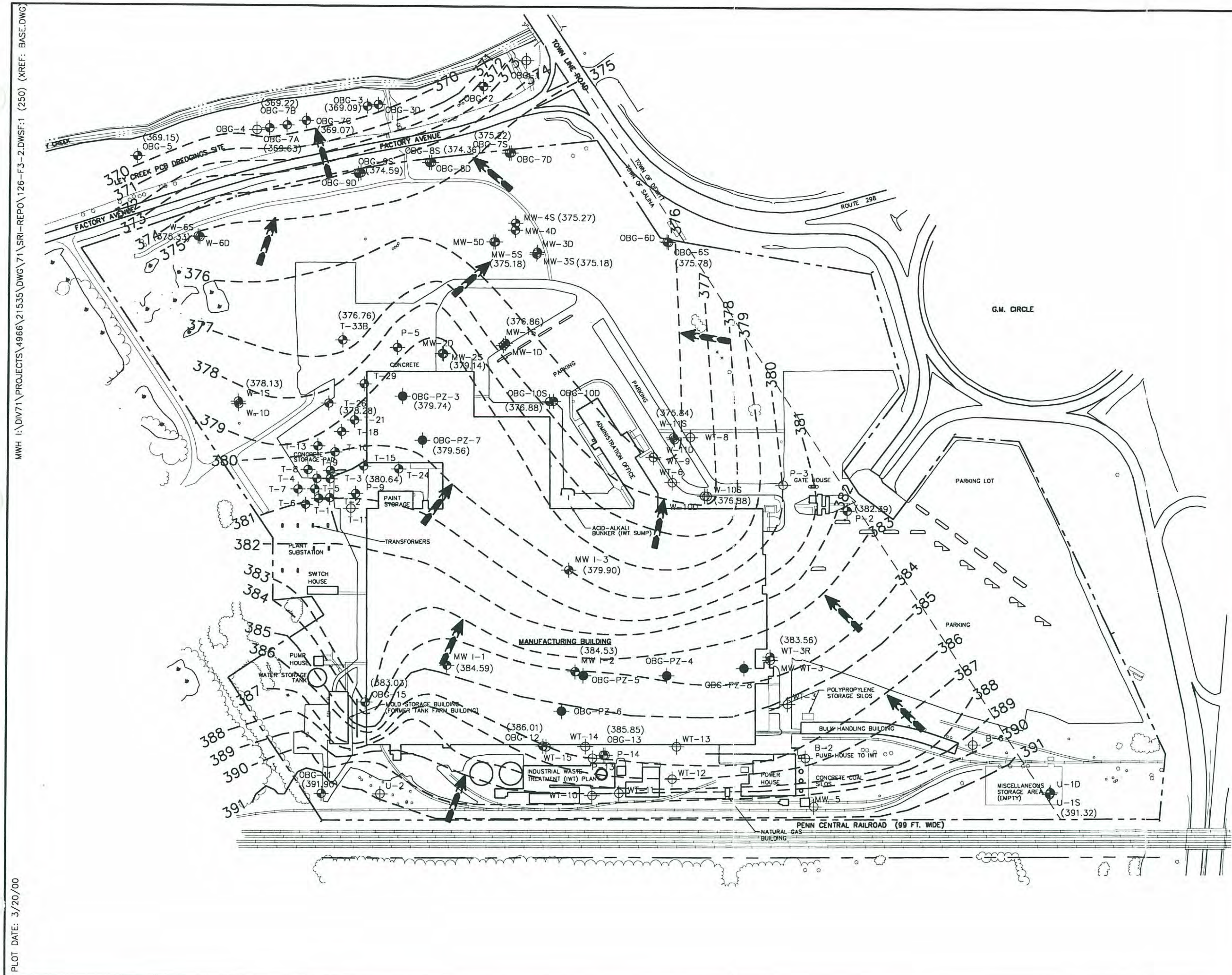


FIGURE 3-3

LEGEND

- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- PIEZOMETER
- PROPERTY BOUNDARY
- TREE LINE
- (375.78) GROUND WATER ELEVATION
- GROUND WATER ELEVATION CONTOUR
- SHALLOW GROUND WATER FLOW DIRECTION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

SHALLOW GROUND WATER ELEVATION MAP (10/27/99)

0 250 500
SCALE IN FEET

FILE NO. 4966.21535.126
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060771

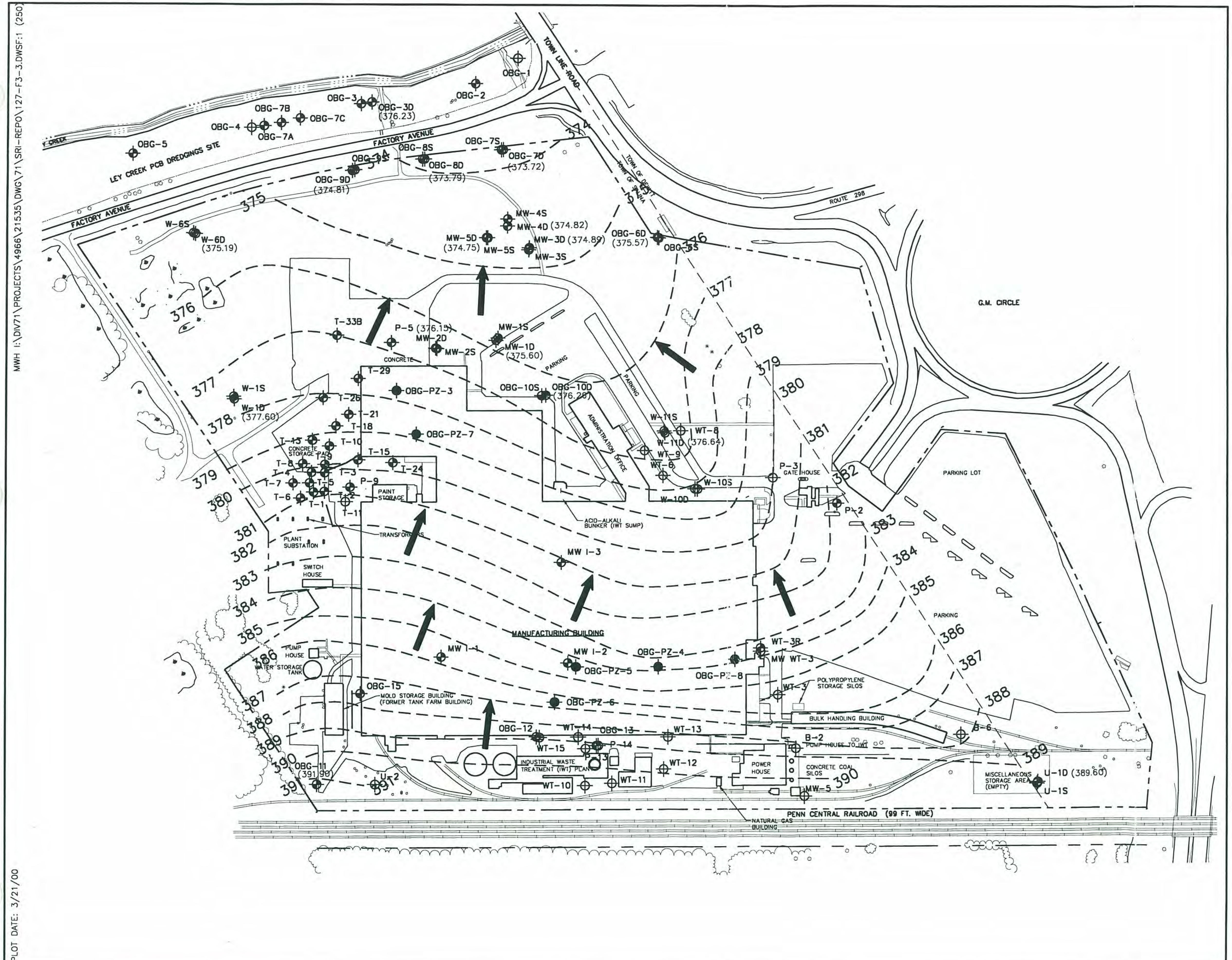


FIGURE 3-4

LEGEND

MONITORING WELL

MONITORING WELL NOT SAMPLED

PIEZOMETER

PROPERTY BOUNDARY

TREE LINE

(375.78) GROUND WATER ELEVATION

EQUIPOTENTION/LIMITS

SHALLOW GROUND WATER FLOW DIRECTION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

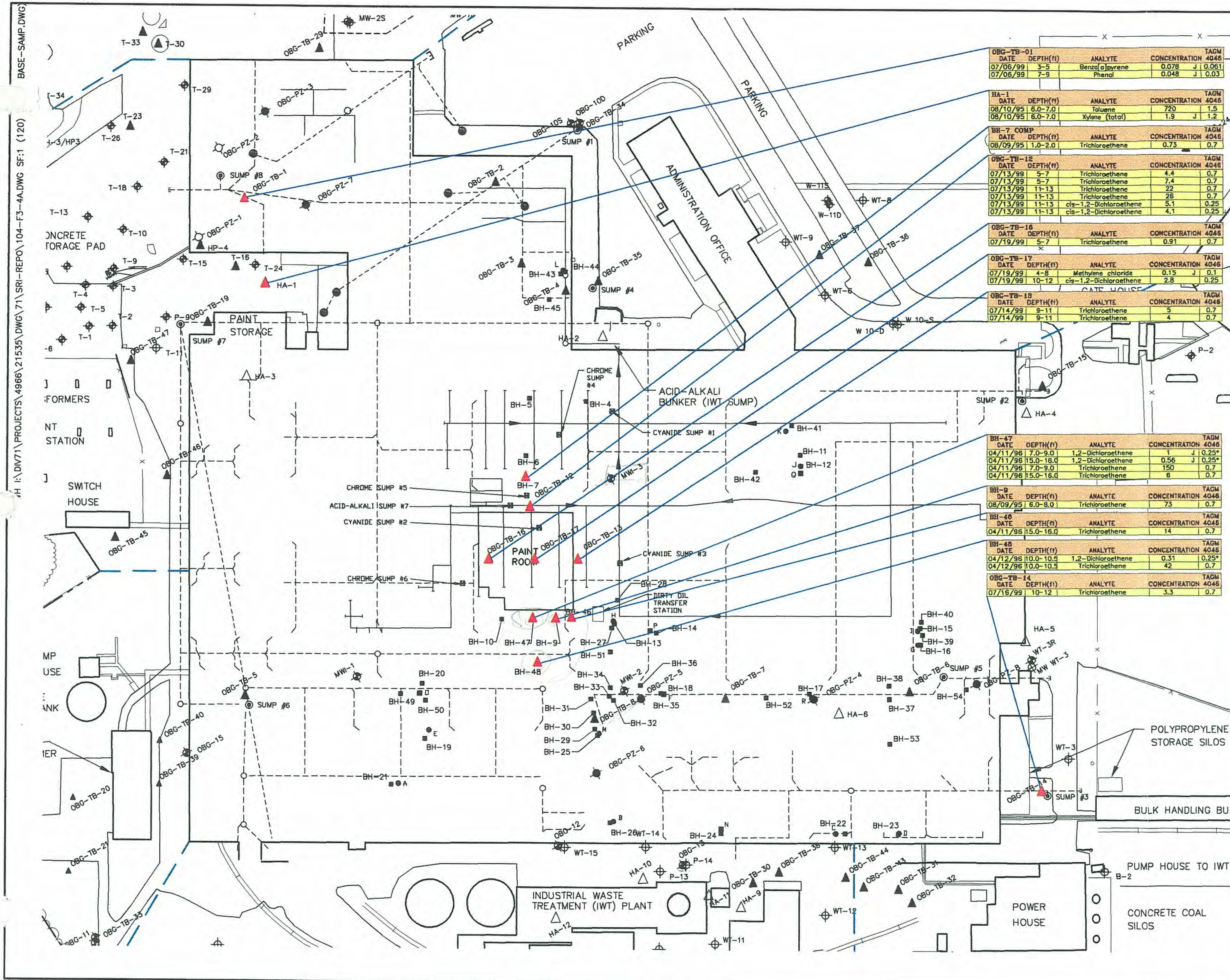
DEEP GROUND WATER ELEVATION MAP (10/27/99)

0 250 500
SCALE IN FEET

FILE NO. 4966.21535.127
DATE: MARCH 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060772



OBG-TB-01 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
07/06/99	3-5	Benzo[a]pyrene	0.078	J	0.061
07/06/99	7-9	Phenol	0.048	J	0.03

HA-1 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
08/10/95	6.0-7.0	Toluene	720		1.5
08/10/95	6.0-7.0	Xylene (total)	1.9	J	1.2

BH-7 COMP DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
08/09/95	1.0-2.0	Trichloroethene	0.73		0.7

OBG-TB-12 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
07/13/99	5-7	Trichloroethene	4.4		0.7
07/13/99	5-7	Trichloroethene	7.4		0.7
07/13/99	11-13	Trichloroethene	22		0.7
07/13/99	11-13	Trichloroethene	26		0.7
07/13/99	11-13	cis-1,2-Dichloroethene	5.1		0.25
07/13/99	11-13	cis-1,2-Dichloroethene	4.1		0.25

OBG-TB-16 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
07/19/99	5-7	Trichloroethene	0.91		0.7

OBG-TB-17 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
07/19/99	4-8	Methylene chloride	0.15	J	0.1
07/19/99	10-12	cis-1,2-Dichloroethene	2.8		0.25

OBG-TB-13 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
07/14/99	9-11	Trichloroethene	5		0.7
07/14/99	9-11	Trichloroethene	4		0.7

BH-47 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
04/11/96	7.0-9.0	1,2-Dichloroethene	1	J	0.25*
04/11/96	15.0-16.0	1,2-Dichloroethene	0.56	J	0.25*
04/11/96	7.0-9.0	Trichloroethene	150		0.7
04/11/96	15.0-16.0	Trichloroethene	6		0.7

BH-9 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
08/09/95	6.0-8.0	Trichloroethene	73		0.7

BH-46 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
04/11/96	15.0-16.0	Trichloroethene	14		0.7

BH-48 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
04/12/96	10.0-10.5	1,2-Dichloroethene	0.31		0.25*
04/12/96	10.0-10.5	Trichloroethene	42		0.7

OBG-TB-14 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
07/16/99	10-12	Trichloroethene	3.3		0.7

FIGURE 3-5A

LEGEND

- BURIED MANHOLE
- HYDRAULIC OIL SUMP (OUT OF SERVICE)
- HYDRAULIC OIL UNDERGROUND STORAGE TANK (REMOVED)
- CRA BORE HOLE
- CRA HAND AUGER SAMPLE LOCATION
- OIL/WATER COLLECTION SUMP
- INACTIVE STORM SEWER
- INACTIVE PROCESS SEWER
- MANHOLE
- CAPPED PIPE
- PIEZOMETER
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE

NOTES: UNITS = mg/Kg
J = ESTIMATED VALUE
* = TAGM VALUE FOR cis-1,2-Dichloroethene

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

MANUF. BUILDING VOC AND SVOC CONCENTRATIONS IN SUBSURFACE SOIL

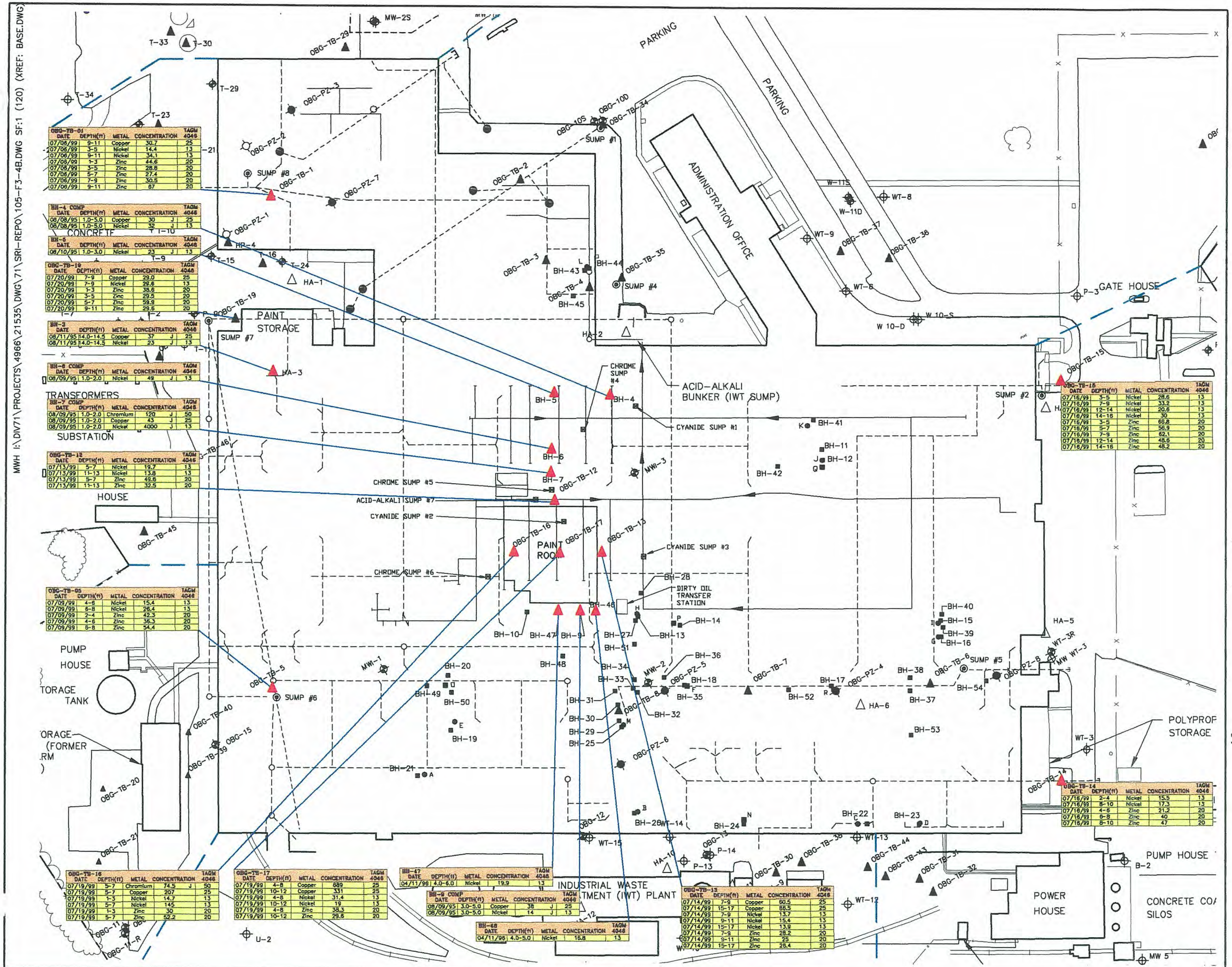
GREATER THAN SCREENING LEVELS

0 120 240
SCALE IN FEET

FILE NO. 4966.21535.104
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060773



OBG-TB-01 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/08/99	9-11	Copper	30.7	25
07/06/99	3-5	Nickel	14.4	13
07/06/99	9-11	Nickel	34.1	13
07/08/99	1-3	Zinc	44.6	20
07/08/99	3-5	Zinc	28.8	20
07/08/99	5-7	Zinc	27.4	20
07/06/99	7-9	Zinc	30.5	20
07/06/99	9-11	Zinc	67	20

BH-4 COMP DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
08/08/95	1.0-5.0	Copper	30 J	25
08/08/95	1.0-5.0	Nickel	32 J	13

BH-5 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
08/10/95	1.0-3.0	Nickel	23 J	13

OBG-TB-19 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/20/99	7-9	Copper	29.0	25
07/20/99	7-9	Nickel	29.6	13
07/20/99	1-3	Zinc	38.6	20
07/20/99	3-5	Zinc	29.5	20
07/20/99	5-7	Zinc	59.9	20
07/20/99	9-11	Zinc	29.6	20

BH-3 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
08/11/95	14.0-14.5	Copper	37 J	25
08/11/95	14.0-14.5	Nickel	23 J	13

BH-6 COMP DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
08/09/95	1.0-2.0	Nickel	49 J	13

BH-7 COMP DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
08/09/95	1.0-2.0	Chromium	120 J	50
08/09/95	1.0-2.0	Copper	43 J	25
08/09/95	1.0-2.0	Nickel	4000 J	13

OBG-TB-12 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/13/99	5-7	Nickel	19.7	13
07/13/99	11-13	Nickel	13.8	13
07/13/99	5-7	Zinc	49.6	20
07/13/99	11-13	Zinc	32.5	20

OBG-TB-05 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/09/99	4-6	Nickel	15.4	13
07/09/99	6-8	Nickel	26.4	13
07/09/99	2-4	Zinc	42.3	20
07/09/99	4-6	Zinc	36.3	20
07/09/99	6-8	Zinc	54.4	20

OBG-TB-15 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/16/99	3-5	Nickel	28.6	13
07/16/99	7-9	Nickel	33.2	13
07/16/99	12-14	Nickel	20.6	13
07/16/99	14-16	Nickel	30	13
07/16/99	3-5	Zinc	66.8	20
07/16/99	5-7	Zinc	56.9	20
07/16/99	7-9	Zinc	62.1	20
07/16/99	12-14	Zinc	48.6	20
07/16/99	14-16	Zinc	48.2	20

OBG-TB-14 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/16/99	2-4	Nickel	15.5	13
07/16/99	8-10	Nickel	17.3	13
07/16/99	4-6	Zinc	21.2	20
07/16/99	6-8	Zinc	40	20
07/16/99	8-10	Zinc	47	20

OBG-TB-16 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/19/99	5-7	Chromium	74.5 J	50
07/19/99	5-7	Copper	207	25
07/19/99	1-3	Nickel	14.7	13
07/19/99	5-7	Nickel	145	13
07/19/99	1-3	Zinc	30	20
07/19/99	5-7	Zinc	52.2	20

OBG-TB-17 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/19/99	4-8	Copper	689	25
07/19/99	10-12	Copper	331	25
07/19/99	4-8	Nickel	31.4	13
07/19/99	10-12	Nickel	19	13
07/19/99	4-8	Zinc	38.3	20
07/19/99	10-12	Zinc	29.6	20

BH-47 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
04/11/96	4.0-6.0	Nickel	19.9	13

BH-9 COMP DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
08/09/95	3.0-5.0	Copper	38 J	25
08/09/95	3.0-5.0	Nickel	14 J	13

BH-48 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
04/11/96	4.0-5.0	Nickel	16.8	13

OBG-TB-13 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/14/99	7-9	Copper	60.5	25
07/14/99	15-17	Copper	88.5	25
07/14/99	7-9	Nickel	13.7	13
07/14/99	9-11	Nickel	15.4	13
07/14/99	15-17	Nickel	13.9	13
07/14/99	7-9	Zinc	28.2	20
07/14/99	9-11	Zinc	25	20
07/14/99	15-17	Zinc	28.4	20

FIGURE 3-5B

LEGEND

- BURIED MANHOLE
- HYDRAULIC OIL SUMP (OUT OF SERVICE)
- HYDRAULIC OIL UNDERGROUND STORAGE TANK (REMOVED)
- CRA BORE HOLE
- HA-5 CRA HAND AUGER SAMPLE LOCATION
- OIL/WATER COLLECTION SUMP
- INACTIVE STORM SEWER
- INACTIVE PROCESS SEWER
- MANHOLE
- E CAPPED PIPE
- PIEZOMETER
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE

NOTES: UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

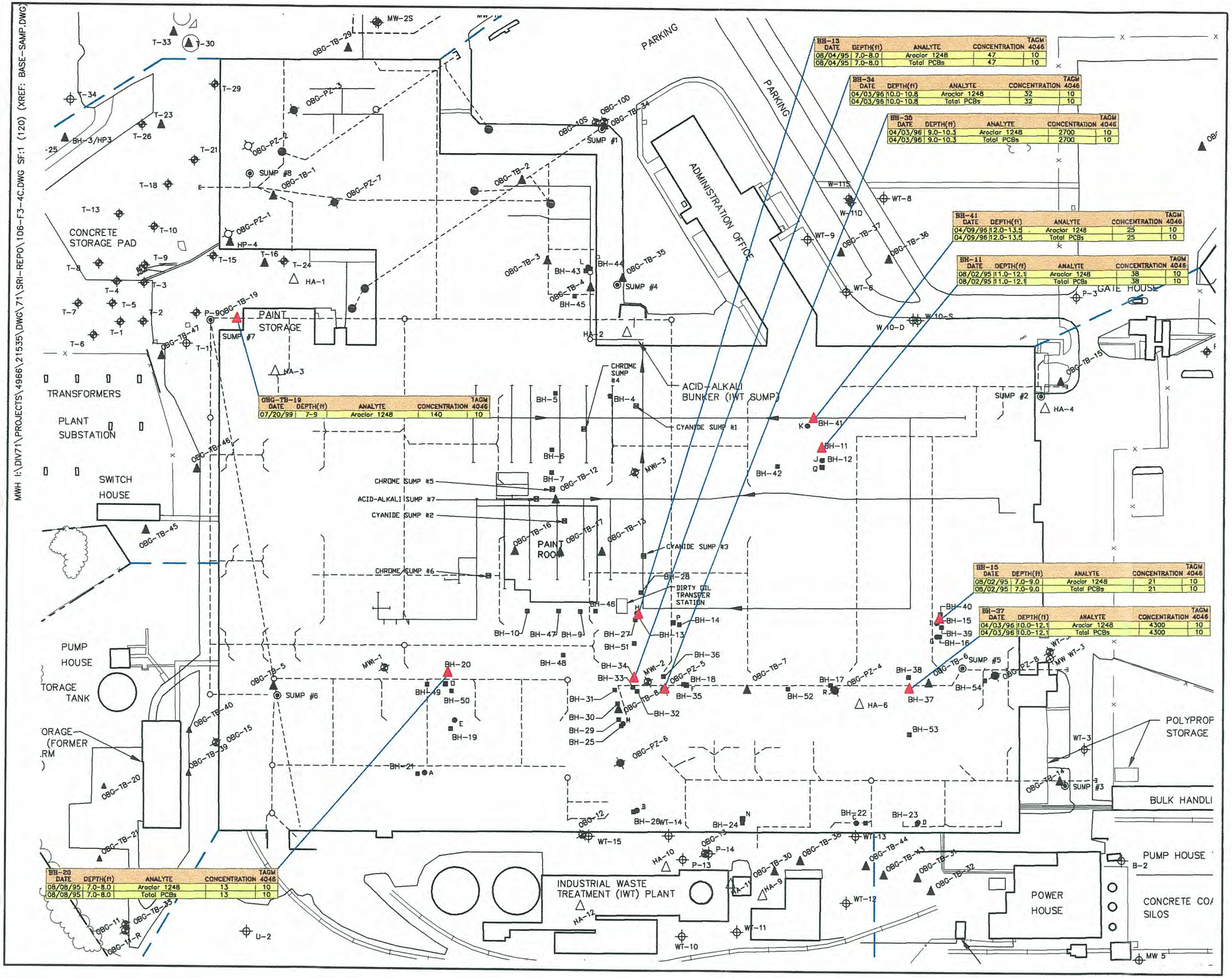
MANUF. BUILDING
SITE RELATED METALS/CYANIDE CONCENTRATIONS IN SUBSURFACE SOIL
GREATER THAN SCREENING LEVELS

0 120 240
SCALE IN FEET

FILE NO. 4966.21535.105
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060774



BH-13 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
08/04/95	7.0-8.0	Aroclor 1248	47	10
08/04/95	7.0-8.0	Total PCBs	47	10

BH-34 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
04/03/96	10.0-10.8	Aroclor 1248	32	10
04/03/96	10.0-10.8	Total PCBs	32	10

BH-35 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
04/03/96	9.0-10.3	Aroclor 1248	2700	10
04/03/96	9.0-10.3	Total PCBs	2700	10

BH-41 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
04/09/96	12.0-13.5	Aroclor 1248	25	10
04/09/96	12.0-13.5	Total PCBs	25	10

BH-11 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
08/02/95	11.0-12.1	Aroclor 1248	38	10
08/02/95	11.0-12.1	Total PCBs	38	10

OBG-TB-19 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
07/20/99	7-9	Aroclor 1248	140	10

BH-15 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
08/02/95	7.0-9.0	Aroclor 1248	21	10
08/02/95	7.0-9.0	Total PCBs	21	10

BH-37 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
04/03/96	10.0-12.1	Aroclor 1248	4300	10
04/03/96	10.0-12.1	Total PCBs	4300	10

BH-20 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
08/08/95	7.0-8.0	Aroclor 1248	13	10
08/08/95	7.0-8.0	Total PCBs	13	10

FIGURE 3-5C

LEGEND

- BURIED MANHOLE
- HYDRAULIC OIL SUMP (OUT OF SERVICE)
- HYDRAULIC OIL UNDERGROUND STORAGE TANK (REMOVED)
- CRA BORE HOLE
- HA-5 CRA HAND AUGER SAMPLE LOCATION
- OIL/WATER COLLECTION SUMP
- INACTIVE STORM SEWER
- INACTIVE PROCESS SEWER
- MANHOLE
- E---- CAPPED PIPE
- PIEZOMETER
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE

NOTE: UNITS = mg/Kg

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

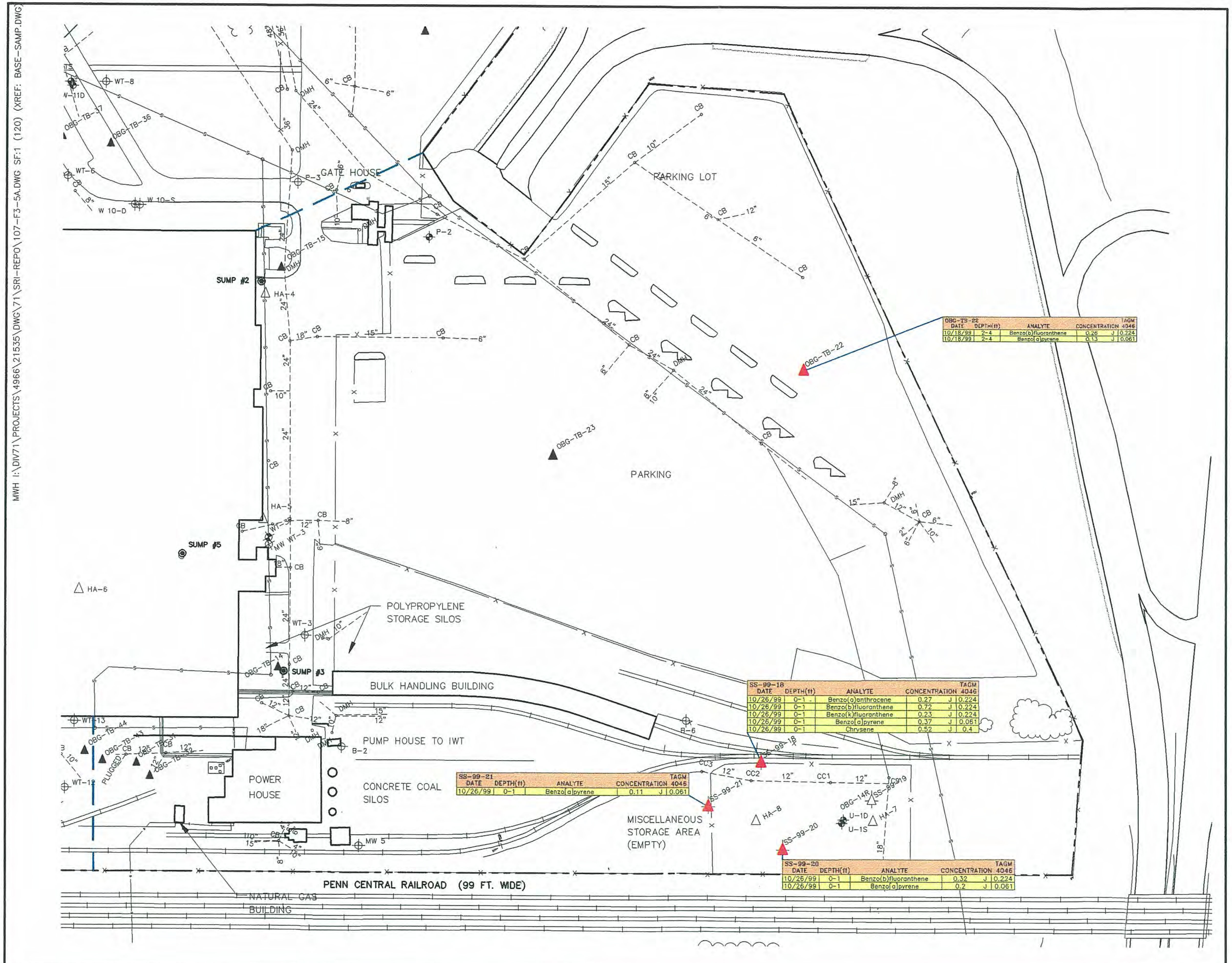
MANUF. BUILDING
PCB CONCENTRATIONS
IN SUBSURFACE SOIL
GREATER THAN SCREENING LEVELS

0 120 240
SCALE IN FEET

FILE NO. 4966.21535.106
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060775



OBG-TB-22 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/18/99	2-4	Benzo(b)fluoranthene	0.26	J	0.224
10/18/99	2-4	Benzo[a]pyrene	0.13	J	0.061

SS-99-18 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(a)anthracene	0.27	J	0.224
10/26/99	0-1	Benzo(b)fluoranthene	0.72	J	0.224
10/26/99	0-1	Benzo(k)fluoranthene	0.23	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.37	J	0.061
10/26/99	0-1	Chrysene	0.52	J	0.4

SS-99-21 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo[a]pyrene	0.11	J	0.061

SS-99-20 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(b)fluoranthene	0.32	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.2	J	0.061

FIGURE 3-6A

LEGEND

- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

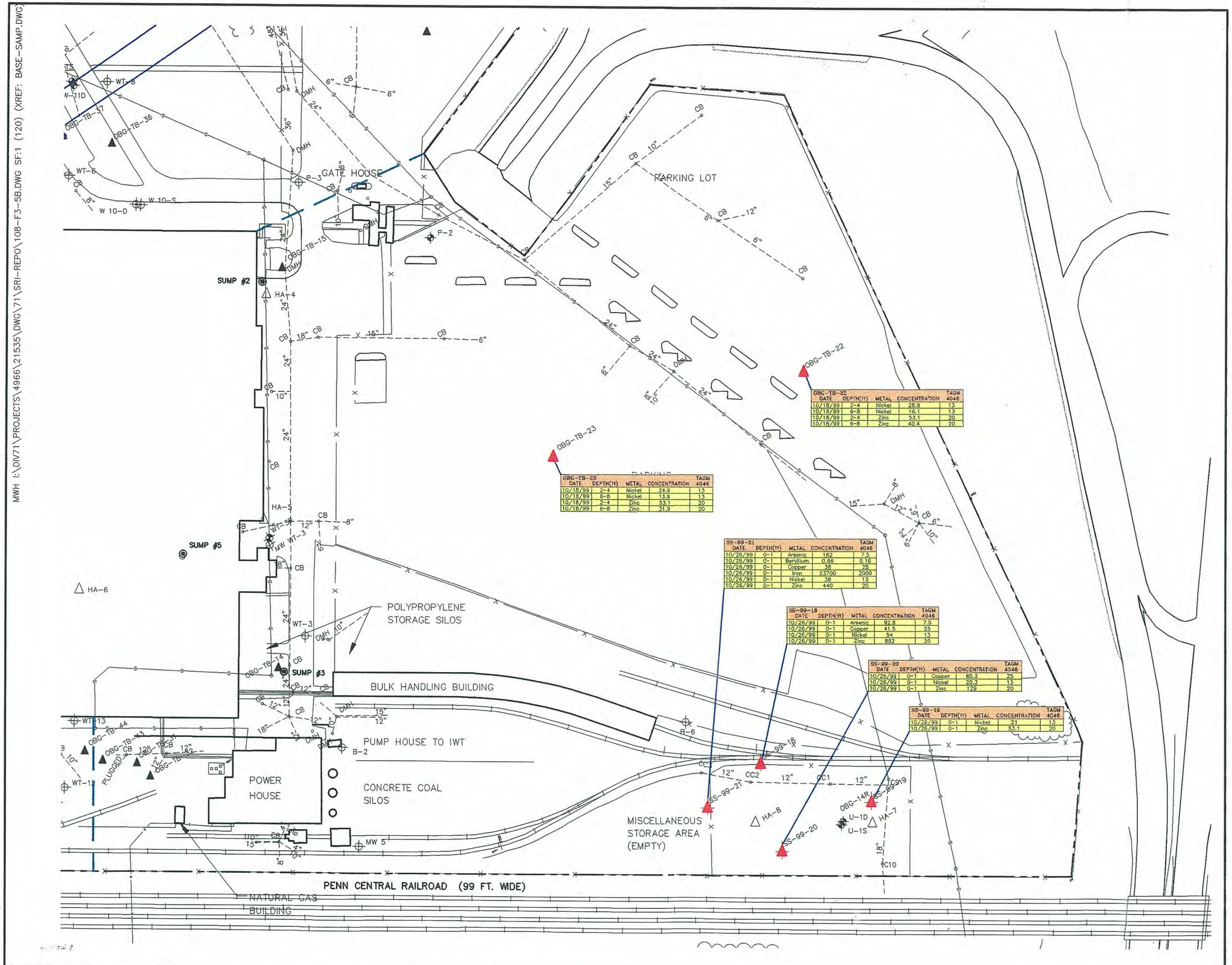
SOUTHEAST PROPERTY AREA – VOC AND SVOC CONCENTRATIONS IN SOIL GREATER THAN SCREENING LEVELS

0 120 240
SCALE IN FEET

FILE NO. 4966.21535.107
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 3-6B



OBG-TB-22 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/18/99	2-4	Nickel	26.9	13
10/18/99	6-8	Nickel	16.1	13
10/18/99	2-4	Zinc	53.1	20
10/18/99	6-8	Zinc	40.4	20

OBG-TB-23 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/18/99	2-4	Nickel	24.9	13
10/18/99	6-8	Nickel	13.9	13
10/18/99	2-4	Zinc	53.1	20
10/18/99	6-8	Zinc	31.9	20

SS-99-21 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Arsenic	162	7.5
10/26/99	0-1	Beryllium	0.66	0.16
10/26/99	0-1	Copper	38	25
10/26/99	0-1	Iron	23700	2000
10/26/99	0-1	Nickel	38	13
10/26/99	0-1	Zinc	440	20

SS-99-18 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Arsenic	92.8	7.5
10/26/99	0-1	Copper	41.5	25
10/26/99	0-1	Nickel	54	13
10/26/99	0-1	Zinc	892	20

SS-99-20 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Copper	60.3	25
10/26/99	0-1	Nickel	20.3	13
10/26/99	0-1	Zinc	129	20

SS-99-19 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Nickel	21	13
10/26/99	0-1	Zinc	53.1	20

LEGEND

- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- AREA BOUNDARY LINE

NOTE: UNITS = mg/Kg

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

SOUTHEAST PROPERTY AREA – SITE RELATED METAL/CYANIDE CONCENTRATIONS IN SOIL

GREATER THAN SCREENING LEVELS

0 120 240

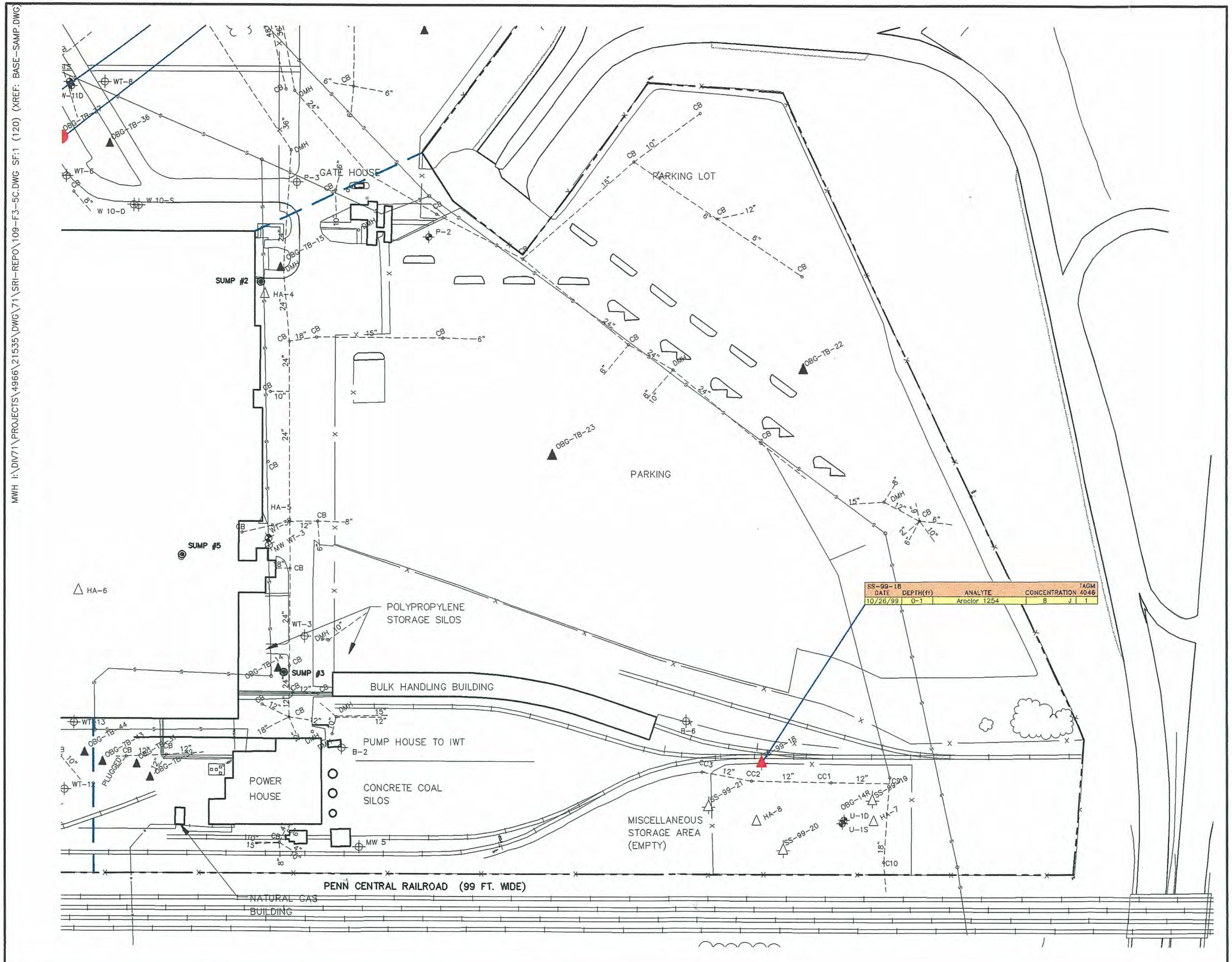
SCALE IN FEET

FILE NO. 4966.21535.108
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060777

FIGURE 3-6C



LEGEND

- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

SOUTHEAST PROPERTY AREA – PCB CONCENTRATIONS IN SOIL
GREATER THAN SCREENING LEVELS

0 120 240
SCALE IN FEET

FILE NO. 4966.21535.109
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060778

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\109-F3-5C.DWG SF:1 (120) (XREF: BASE-SAMP.DWG)

FIGURE 3-7A

SS-99-31

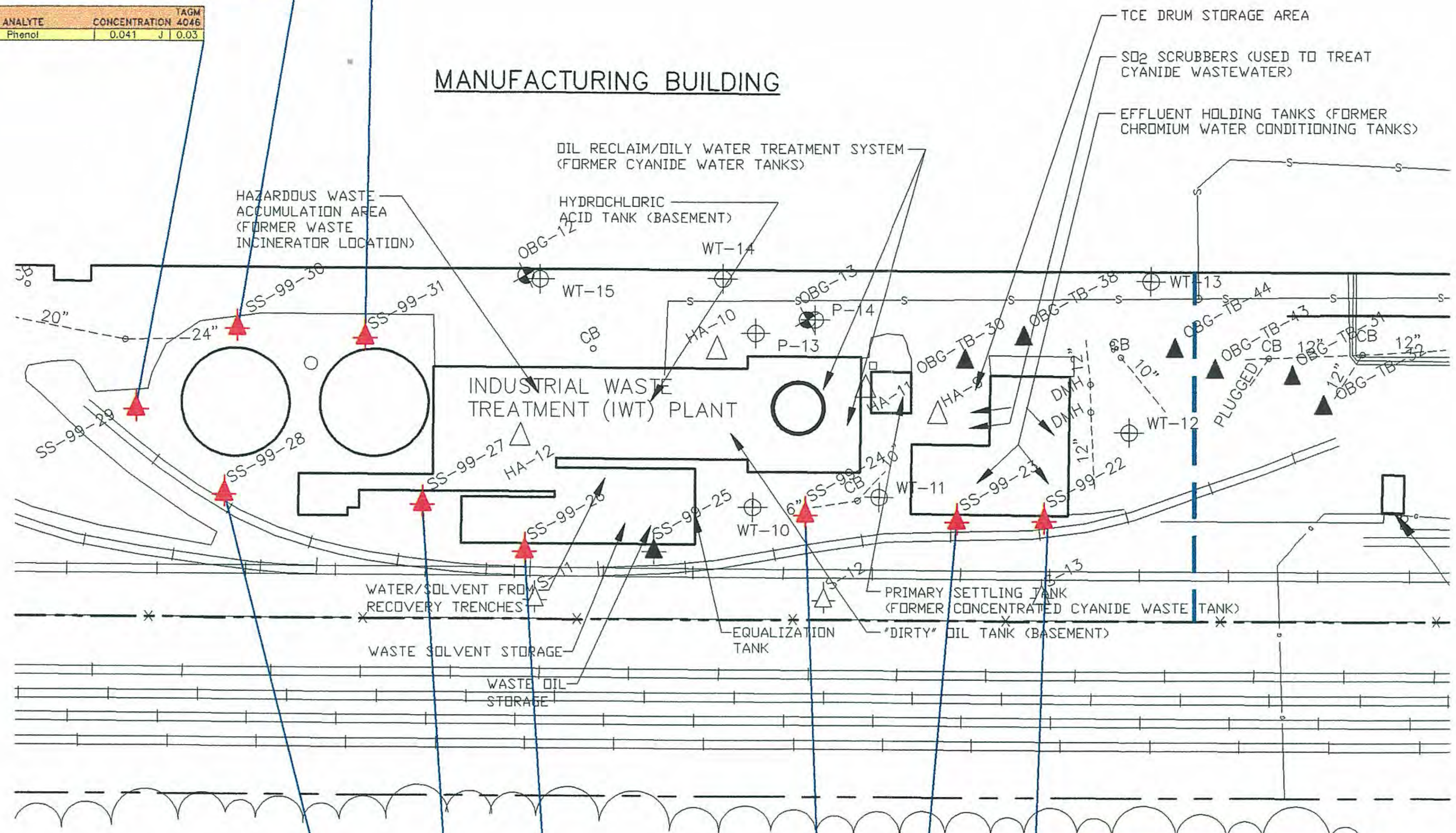
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/27/99	0-1	Benzo(a)anthracene	0.81	J	0.224
10/27/99	0-1	Chrysene	0.9	J	0.4

SS-99-30

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/27/99	0-1	Benzo(a)anthracene	7.6		0.224
10/27/99	0-1	Benzo(b)fluoranthene	12	J	0.224
10/27/99	0-1	Benzo(k)fluoranthene	3.8	J	0.224
10/27/99	0-1	Benzo[a]pyrene	8.4		0.061
10/27/99	0-1	Chrysene	8.5		0.4
10/27/99	0-1	Indeno(1,2,3-cd)pyrene	3.5	J	3.2

SS-99-29

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/27/99	0-1	Phenol	0.041	J	0.03



SS-99-28

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/27/99	0-1	Benzo(b)fluoranthene	0.31	J	0.224
10/27/99	0-1	Benzo[a]pyrene	0.19	J	0.061

SS-99-27

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/27/99	0-1	Benzo[a]pyrene	0.077	J	0.061

SS-99-26

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/27/99	0-1	Benzo(a)anthracene	12	J	0.224
10/27/99	0-1	Chrysene	18	J	0.4
10/27/99	0-1	Dibenzo(a,h)anthracene	3.9	J	0.014
10/27/99	0-1	Indena(1,2,3-cd)pyrene	12	J	3.2
10/27/99	0-1	Phenol	0.85	J	0.03

SS-99-22

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/27/99	0-1	Benzo(a)anthracene	0.91		0.224
10/27/99	0-1	Benzo(b)fluoranthene	1.5		0.224
10/27/99	0-1	Benzo(k)fluoranthene	0.47	J	0.224
10/27/99	0-1	Benzo[a]pyrene	1.1		0.061
10/27/99	0-1	Chrysene	1	J	0.4
10/27/99	0-1	Dibenzo(a,h)anthracene	0.14	J	0.014

SS-99-23

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/27/99	0-1	Benzo(a)anthracene	0.33	J	0.224
10/27/99	0-1	Benzo(b)fluoranthene	0.45	J	0.224
10/27/99	0-1	Benzo[a]pyrene	0.35	J	0.061
10/27/99	0-1	Chrysene	0.41	J	0.4

SS-99-24

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/27/99	0-1	Benzo(a)anthracene	4.7	J	0.224
10/27/99	0-1	Benzo(b)fluoranthene	4.8	J	0.224
10/27/99	0-1	Benzo(k)fluoranthene	1.8	J	0.224
10/27/99	0-1	Benzo[a]pyrene	3.3	J	0.061
10/27/99	0-1	Chrysene	5.3		0.4
10/27/99	0-1	Dibenzo(a,h)anthracene	0.36	J	0.014

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

IWT PLANT AREA VOC AND SVOC CONCENTRATIONS IN SOIL

GREATER THAN SCREENING LEVELS

0 80 160
SCALE IN FEET

FILE NO. 4966.21535.110
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060779

FIGURE 3-7B

SS-99-31 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/27/99	0-1	Arsenic	13.9	7.5
10/27/99	0-1	Chromium	59.1	50
10/27/99	0-1	Copper	37.8	25
10/27/99	0-1	Nickel	41.2	13
10/27/99	0-1	Zinc	117	20

SS-99-30 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/27/99	0-1	Nickel	14.9	13
10/27/99	0-1	Zinc	52.5	20

SS-99-29 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/27/99	0-1	Nickel	26.8	13
10/27/99	0-1	Zinc	86.1	20

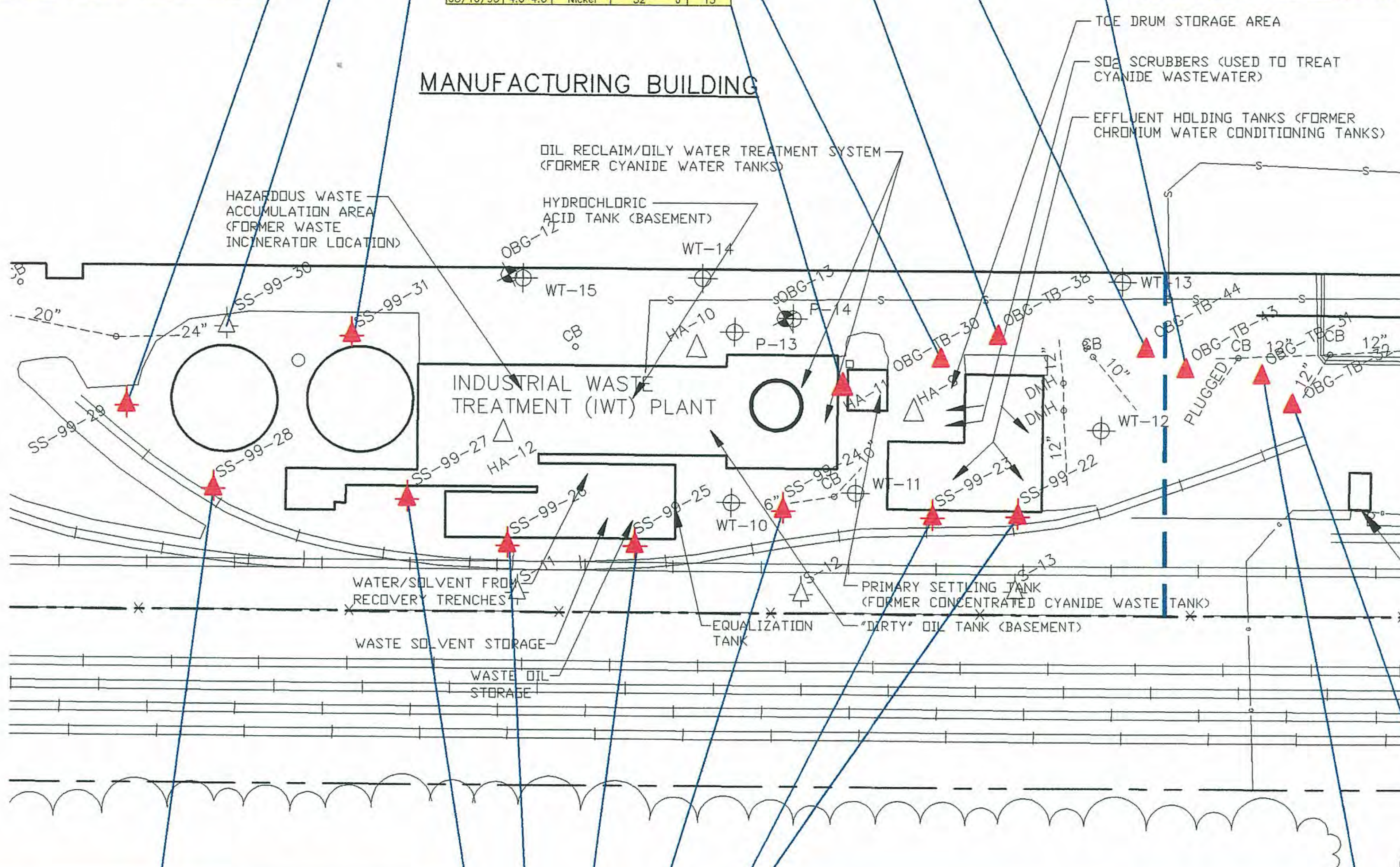
OBG-TB-38 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/21/99	4-6	Zinc	22.9	20

OBG-TB-30 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/19/99	4-6	Nickel	14.1	13
10/19/99	4-6	Zinc	28.5	20

HA-11 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
08/10/95	4.0-4.6	Copper	37 J	25
08/10/95	4.0-4.6	Nickel	32 J	13

OBG-TB-44 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/25/99	2-4	Copper	44.3	25
10/25/99	2-4	Nickel	55.9	13
10/25/99	2-4	Zinc	553 J	20
10/25/99	6-8	Zinc	26.6	20

OBG-TB-43 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/25/99	2-4	Nickel	13.7	13
10/25/99	4-6	Nickel	14.9	13
10/25/99	2-4	Zinc	34.3	20
10/25/99	4-6	Zinc	33.5	20



SS-99-28 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/27/99	0-1	Nickel	16.9	13
10/27/99	0-1	Zinc	137	20

SS-99-27 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/27/99	0-1	Arsenic	13.7	7.5
10/27/99	0-1	Nickel	27.8	13
10/27/99	0-1	Zinc	110	20

SS-99-26 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/27/99	0-1	Arsenic	27.1	7.5
10/27/99	0-1	Chromium	32000	50
10/27/99	0-1	Copper	4790	25
10/27/99	0-1	Lead	717	400
10/27/99	0-1	Nickel	6630	13
10/27/99	0-1	Zinc	5880	20

SS-99-25 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/27/99	0-1	Copper	37.2	25
10/27/99	0-1	Nickel	18.5	13
10/27/99	0-1	Zinc	51.7	20

SS-99-22 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/27/99	0-1	Nickel	19.1	13
10/27/99	0-1	Zinc	84.6	20

SS-99-23 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/27/99	0-1	Nickel	17.3	13
10/27/99	0-1	Zinc	50.8	20

SS-99-24 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/27/99	0-1	Beryllium	0.47 J	0.16
10/27/99	0-1	Iron	16900	2000
10/27/99	0-1	Nickel	17	13
10/27/99	0-1	Zinc	47.2	20

OBG-TB-31 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/19/99	2-4	Nickel	19.2	13
10/19/99	2-4	Zinc	43.3	20

OBG-TB-32 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/19/99	2-4	Nickel	15.1	13
10/19/99	4-6	Nickel	14.3	13
10/19/99	2-4	Zinc	34.2	20
10/19/99	4-6	Zinc	36.5	20

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- WATER
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

IWT PLANT AREA METALS/CYANIDE CONCENTRATIONS IN SOIL
GREATER THAN SCREENING LEVELS

0 80 160
SCALE IN FEET

FILE NO. 4966.21535.111
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\111-F3-6B.DWG SF:1 (80) (XREF: BASE-SAMP.DWG)

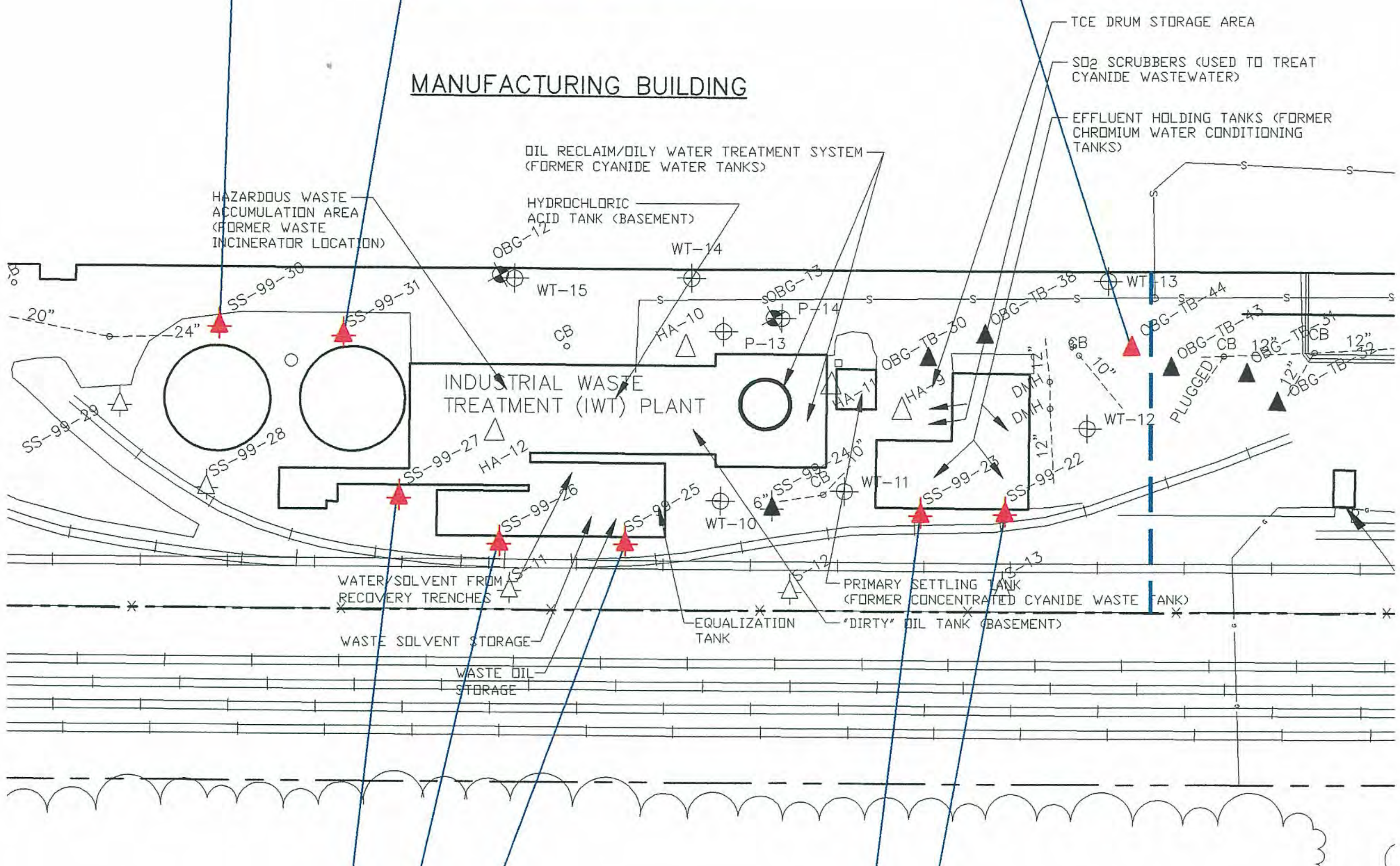
MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\112-F3-6C.DWG SF:1 (80) (XREF: BASE-SAMP.DWG)

FIGURE 3–7C

SS-99-30 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/27/99	0-1	Aroclor 1248	11	1

OBG-TB-44 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/25/99	2-4	Aroclor 1248	190	10

SS-99-31 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/27/99	0-1	Aroclor 1248	14 J	1



SS-99-27 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/27/99	0-1	Aroclor 1248	2 J	1

SS-99-26 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/27/99	0-1	Aroclor 1248	3900	1

SS-99-25 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/27/99	0-1	Aroclor 1248	13	1

SS-99-23 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/27/99	0-1	Aroclor 1248	8	1

SS-99-22 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/27/99	0-1	Aroclor 1248	7	1

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- WATER
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

IWT PLANT AREA PCB CONCENTRATIONS IN SOIL

GREATER THAN SCREENING LEVELS

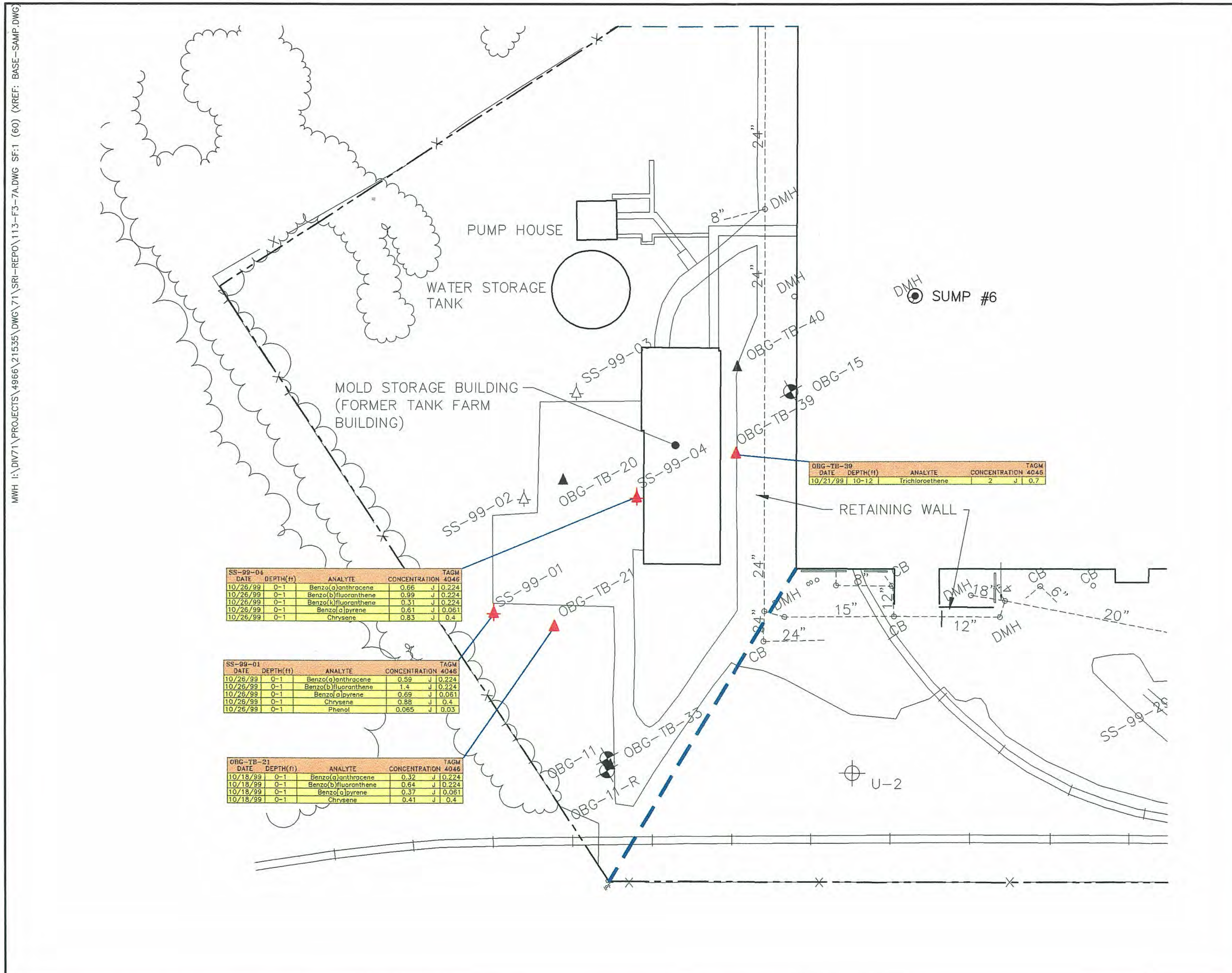
0 80 160
SCALE IN FEET

FILE NO. 4966.21535.112
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060781

FIGURE 3-8A



SS-99-04

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(a)anthracene	0.66	J	0.224
10/26/99	0-1	Benzo(b)fluoranthene	0.99	J	0.224
10/26/99	0-1	Benzo(k)fluoranthene	0.31	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.61	J	0.061
10/26/99	0-1	Chrysene	0.83	J	0.4

SS-99-01

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(a)anthracene	0.59	J	0.224
10/26/99	0-1	Benzo(b)fluoranthene	1.4	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.69	J	0.061
10/26/99	0-1	Chrysene	0.88	J	0.4
10/26/99	0-1	Phenol	0.065	J	0.03

OBG-TB-21

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/18/99	0-1	Benzo(a)anthracene	0.32	J	0.224
10/18/99	0-1	Benzo(b)fluoranthene	0.64	J	0.224
10/18/99	0-1	Benzo[a]pyrene	0.37	J	0.061
10/18/99	0-1	Chrysene	0.41	J	0.4

OBG-TB-39

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/21/99	10-12	Trichloroethene	2	J	0.7

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

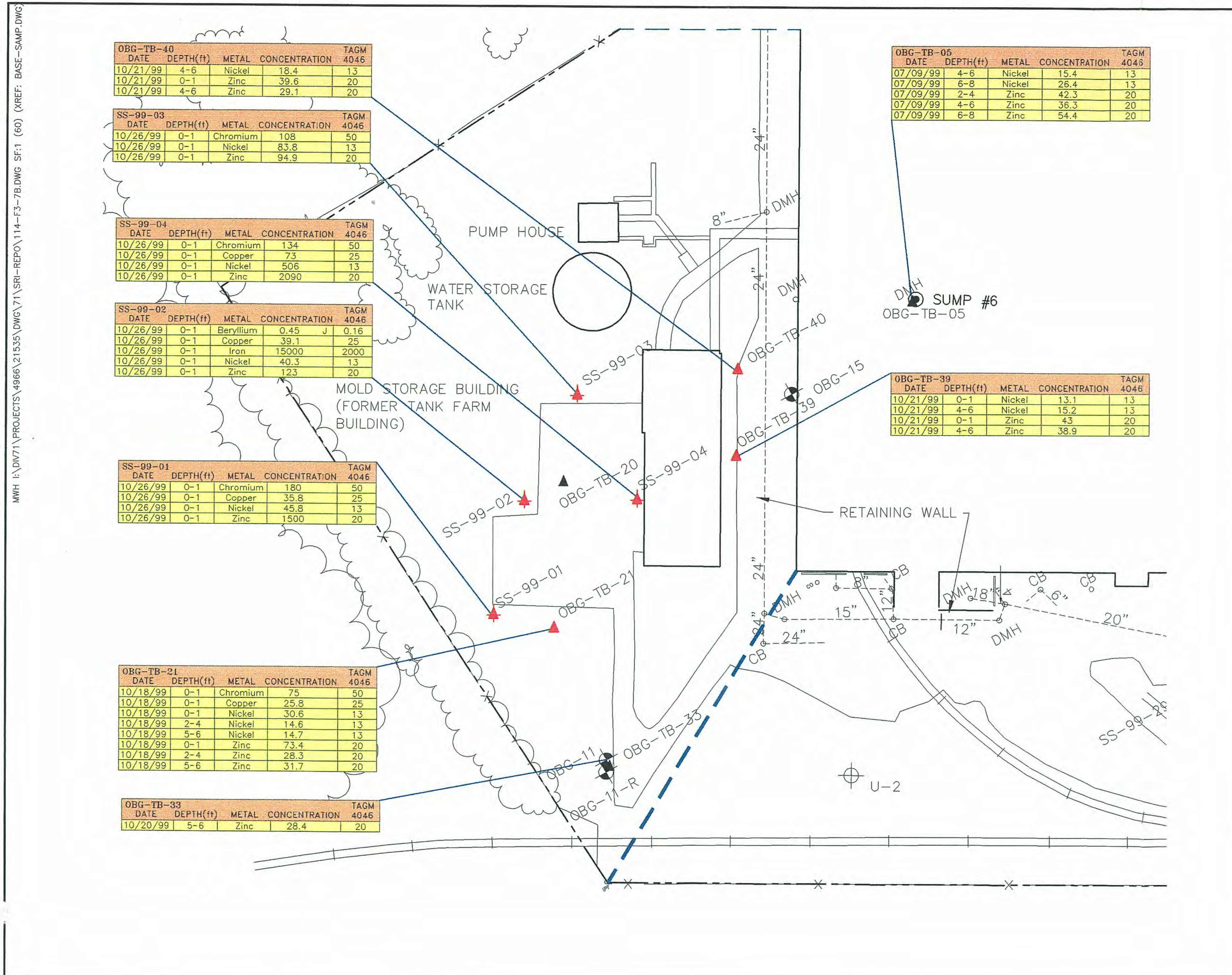
SOUTHWEST PROPERTY AREA – VOC AND SVOC CONCENTRATIONS IN SOIL GREATER THAN SCREENING LEVELS

0 60 120
SCALE IN FEET

FILE NO. 4966.21535.113
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 3-8B



OBG-TB-40 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/21/99	4-6	Nickel	18.4	13
10/21/99	0-1	Zinc	39.6	20
10/21/99	4-6	Zinc	29.1	20

SS-99-03 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Chromium	108	50
10/26/99	0-1	Nickel	83.8	13
10/26/99	0-1	Zinc	94.9	20

SS-99-04 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Chromium	134	50
10/26/99	0-1	Copper	73	25
10/26/99	0-1	Nickel	506	13
10/26/99	0-1	Zinc	2090	20

SS-99-02 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Beryllium	0.45 J	0.16
10/26/99	0-1	Copper	39.1	25
10/26/99	0-1	Iron	15000	2000
10/26/99	0-1	Nickel	40.3	13
10/26/99	0-1	Zinc	123	20

SS-99-01 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Chromium	180	50
10/26/99	0-1	Copper	35.8	25
10/26/99	0-1	Nickel	45.8	13
10/26/99	0-1	Zinc	1500	20

OBG-TB-21 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/18/99	0-1	Chromium	75	50
10/18/99	0-1	Copper	25.8	25
10/18/99	0-1	Nickel	30.6	13
10/18/99	2-4	Nickel	14.6	13
10/18/99	5-6	Nickel	14.7	13
10/18/99	0-1	Zinc	73.4	20
10/18/99	2-4	Zinc	28.3	20
10/18/99	5-6	Zinc	31.7	20

OBG-TB-33 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/20/99	5-6	Zinc	28.4	20

OBG-TB-05 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/09/99	4-6	Nickel	15.4	13
07/09/99	6-8	Nickel	26.4	13
07/09/99	2-4	Zinc	42.3	20
07/09/99	4-6	Zinc	36.3	20
07/09/99	6-8	Zinc	54.4	20

OBG-TB-39 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/21/99	0-1	Nickel	13.1	13
10/21/99	4-6	Nickel	15.2	13
10/21/99	0-1	Zinc	43	20
10/21/99	4-6	Zinc	38.9	20

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

SOUTHWEST PROPERTY AREA – SITE RELATED METALS/CYANIDE CONCENTRATIONS IN SOIL

GREATER THAN SCREENING LEVELS

0 60 120
SCALE IN FEET

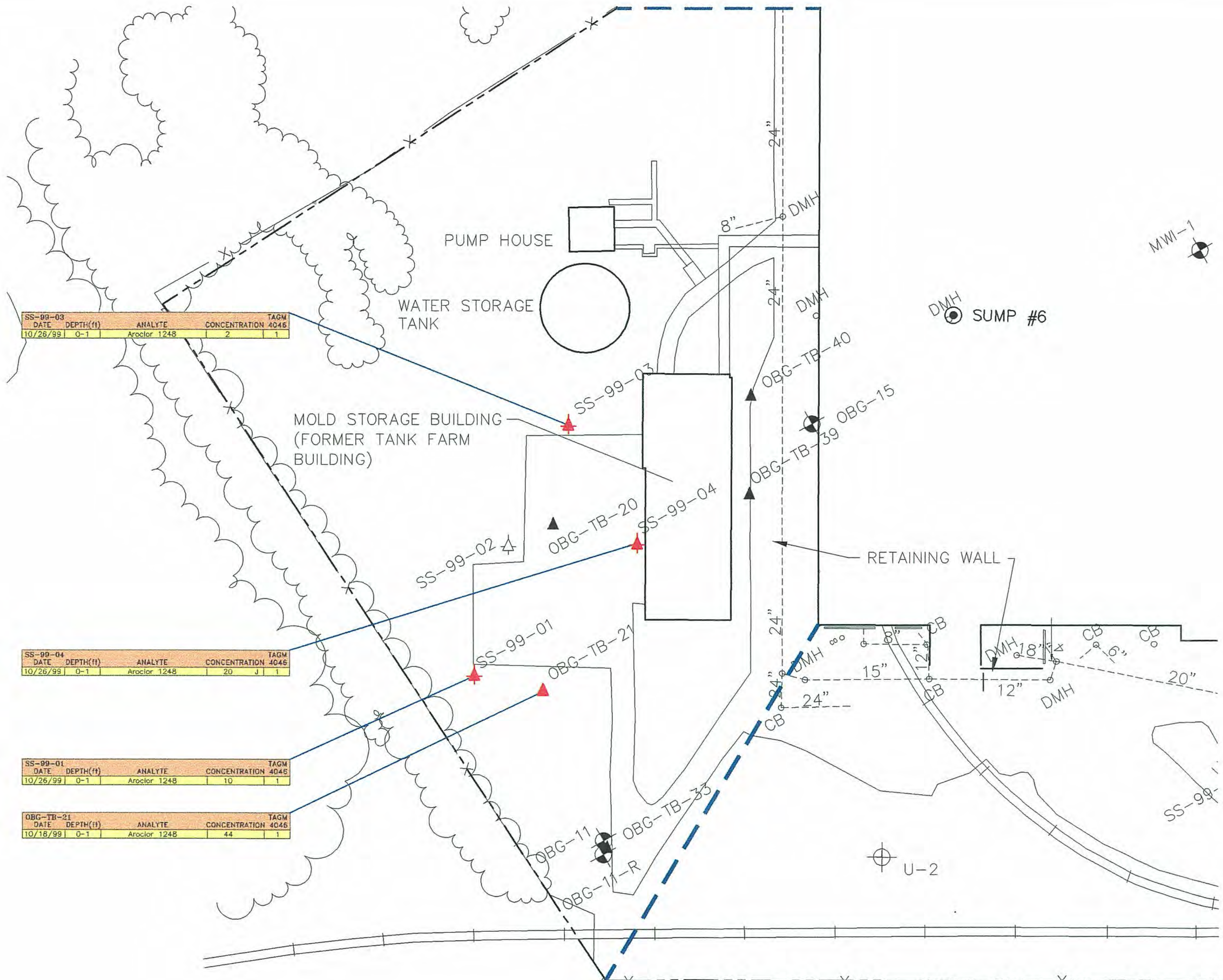
FILE NO. 4966.21535.114
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS INC.

RACER0060783

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\114-F3-7B.DWG SF:1 (60) (XREF: BASE-SAMP.DWG)

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\115-F3-7C.DWG SF:1 (60) (XREF: BASE-SAMP.DWG)



SS-99-03 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/26/99	0-1	Aroclor 1248	2	1

SS-99-04 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/26/99	0-1	Aroclor 1248	20 J	1

SS-99-01 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/26/99	0-1	Aroclor 1248	10	1

OBG-TB-21 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/18/99	0-1	Aroclor 1248	44	1

FIGURE 3-8C

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

SOUTHWEST PROPERTY AREA – PCB CONCENTRATIONS IN SOIL

GREATER THAN SCREENING LEVELS

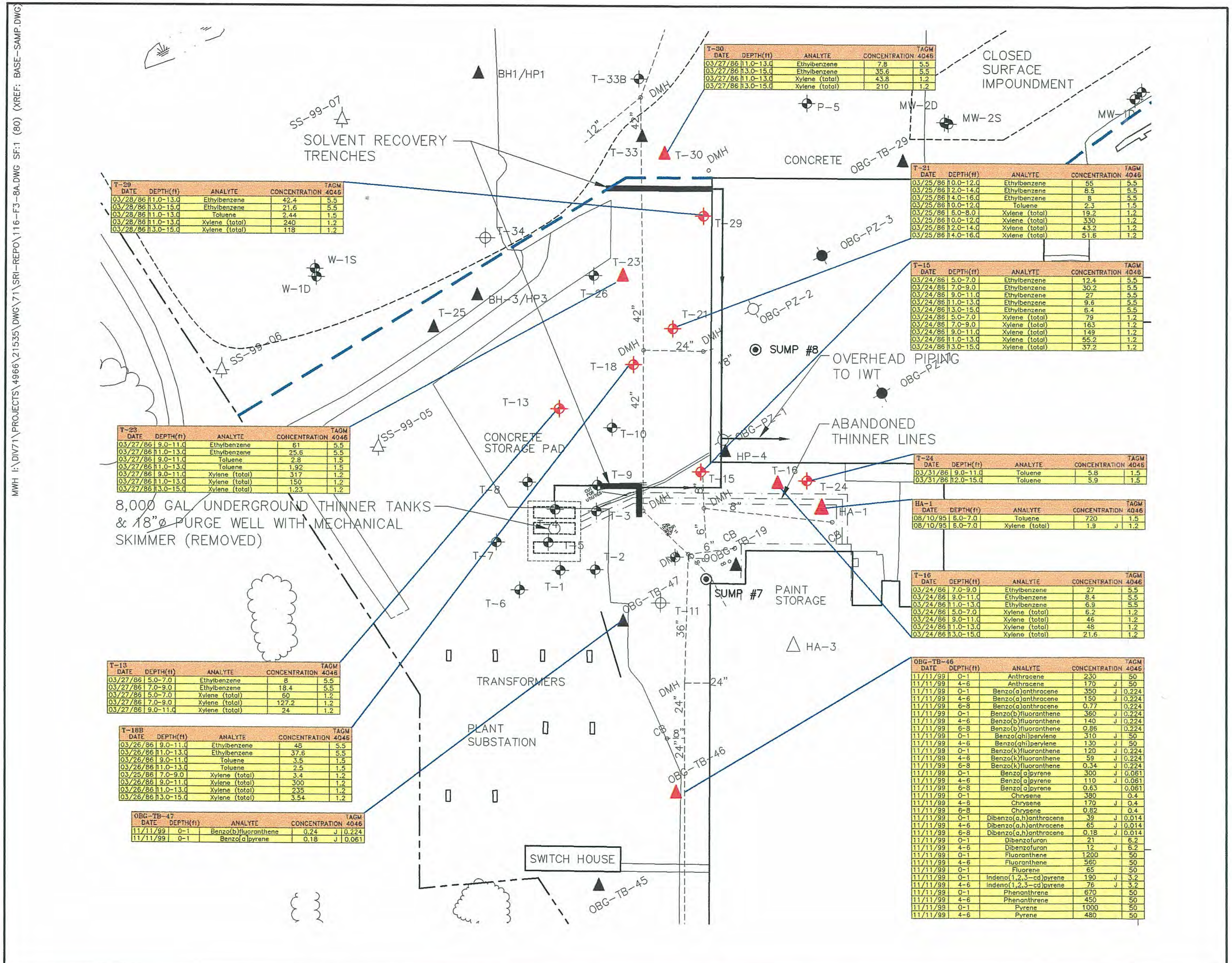
0 60 120
SCALE IN FEET

FILE NO. 4966.21535.115
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060784

FIGURE 3-9A



T-30 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
03/27/86	11.0-13.0	Ethylbenzene	7.8	5.5
03/27/86	13.0-15.0	Ethylbenzene	35.6	5.5
03/27/86	11.0-13.0	Xylene (total)	43.8	1.2
03/27/86	13.0-15.0	Xylene (total)	210	1.2

T-29 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
03/28/86	11.0-13.0	Ethylbenzene	42.4	5.5
03/28/86	13.0-15.0	Ethylbenzene	21.6	5.5
03/28/86	11.0-13.0	Toluene	2.44	1.5
03/28/86	11.0-13.0	Xylene (total)	240	1.2
03/28/86	13.0-15.0	Xylene (total)	118	1.2

T-21 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
03/25/86	10.0-12.0	Ethylbenzene	55	5.5
03/25/86	12.0-14.0	Ethylbenzene	8.5	5.5
03/25/86	14.0-16.0	Ethylbenzene	8	5.5
03/25/86	10.0-12.0	Toluene	2.3	1.5
03/25/86	6.0-8.0	Xylene (total)	19.2	1.2
03/25/86	10.0-12.0	Xylene (total)	330	1.2
03/25/86	12.0-14.0	Xylene (total)	43.2	1.2
03/25/86	14.0-16.0	Xylene (total)	51.6	1.2

T-15 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
03/24/86	5.0-7.0	Ethylbenzene	12.4	5.5
03/24/86	7.0-9.0	Ethylbenzene	30.2	5.5
03/24/86	9.0-11.0	Ethylbenzene	27	5.5
03/24/86	11.0-13.0	Ethylbenzene	9.6	5.5
03/24/86	13.0-15.0	Ethylbenzene	6.4	5.5
03/24/86	5.0-7.0	Xylene (total)	79	1.2
03/24/86	7.0-9.0	Xylene (total)	163	1.2
03/24/86	9.0-11.0	Xylene (total)	149	1.2
03/24/86	11.0-13.0	Xylene (total)	55.2	1.2
03/24/86	13.0-15.0	Xylene (total)	37.2	1.2

T-23 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
03/27/86	9.0-11.0	Ethylbenzene	61	5.5
03/27/86	11.0-13.0	Ethylbenzene	25.6	5.5
03/27/86	9.0-11.0	Toluene	2.8	1.5
03/27/86	11.0-13.0	Toluene	1.92	1.5
03/27/86	9.0-11.0	Xylene (total)	317	1.2
03/27/86	11.0-13.0	Xylene (total)	150	1.2
03/27/86	13.0-15.0	Xylene (total)	1.23	1.2

T-24 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
03/31/86	9.0-11.0	Toluene	5.8	1.5
03/31/86	12.0-15.0	Toluene	5.9	1.5

HA-1 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
08/10/95	6.0-7.0	Toluene	720	1.5
08/10/95	6.0-7.0	Xylene (total)	1.9 J	1.2

T-16 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
03/24/86	7.0-9.0	Ethylbenzene	27	5.5
03/24/86	9.0-11.0	Ethylbenzene	8.4	5.5
03/24/86	11.0-13.0	Ethylbenzene	6.9	5.5
03/24/86	5.0-7.0	Xylene (total)	6.2	1.2
03/24/86	9.0-11.0	Xylene (total)	46	1.2
03/24/86	11.0-13.0	Xylene (total)	48	1.2
03/24/86	13.0-15.0	Xylene (total)	21.6	1.2

T-13 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
03/27/86	5.0-7.0	Ethylbenzene	8	5.5
03/27/86	7.0-9.0	Ethylbenzene	18.4	5.5
03/27/86	5.0-7.0	Xylene (total)	60	1.2
03/27/86	7.0-9.0	Xylene (total)	127.2	1.2
03/27/86	9.0-11.0	Xylene (total)	24	1.2

T-18B DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
03/26/86	9.0-11.0	Ethylbenzene	48	5.5
03/26/86	11.0-13.0	Ethylbenzene	37.6	5.5
03/26/86	9.0-11.0	Toluene	3.5	1.5
03/26/86	11.0-13.0	Toluene	2.5	1.5
03/25/86	7.0-9.0	Xylene (total)	3.4	1.2
03/26/86	9.0-11.0	Xylene (total)	300	1.2
03/26/86	11.0-13.0	Xylene (total)	235	1.2
03/26/86	13.0-15.0	Xylene (total)	3.54	1.2

OBG-TB-47 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
11/11/99	0-1	Benzo(b)fluoranthene	0.24 J	0.224
11/11/99	0-1	Benzo[a]pyrene	0.18 J	0.061

OBG-TB-46 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
11/11/99	0-1	Anthracene	230	50
11/11/99	4-6	Anthracene	170 J	50
11/11/99	0-1	Benzo(a)anthracene	350 J	0.224
11/11/99	4-6	Benzo(a)anthracene	150 J	0.224
11/11/99	6-8	Benzo(a)anthracene	0.77	0.224
11/11/99	0-1	Benzo(b)fluoranthene	360 J	0.224
11/11/99	4-6	Benzo(b)fluoranthene	140 J	0.224
11/11/99	6-8	Benzo(b)fluoranthene	0.86	0.224
11/11/99	0-1	Benzo(ghi)perylene	310 J	50
11/11/99	4-6	Benzo(ghi)perylene	130 J	50
11/11/99	0-1	Benzo(k)fluoranthene	120 J	0.224
11/11/99	4-6	Benzo(k)fluoranthene	59 J	0.224
11/11/99	6-8	Benzo(k)fluoranthene	0.34 J	0.224
11/11/99	0-1	Benzo[a]pyrene	300 J	0.061
11/11/99	4-6	Benzo[a]pyrene	110 J	0.061
11/11/99	6-8	Benzo[a]pyrene	0.63	0.061
11/11/99	0-1	Chrysene	380	0.4
11/11/99	4-6	Chrysene	170 J	0.4
11/11/99	6-8	Chrysene	0.82	0.4
11/11/99	0-1	Dibenzo(a,h)anthracene	39 J	0.014
11/11/99	4-6	Dibenzo(a,h)anthracene	65 J	0.014
11/11/99	6-8	Dibenzo(a,h)anthracene	0.18 J	0.014
11/11/99	0-1	Dibenzofuran	21	6.2
11/11/99	4-6	Dibenzofuran	12 J	6.2
11/11/99	0-1	Fluoranthene	1200	50
11/11/99	4-6	Fluoranthene	560	50
11/11/99	0-1	Fluorene	65	50
11/11/99	0-1	Indeno(1,2,3-cd)pyrene	190 J	3.2
11/11/99	4-6	Indeno(1,2,3-cd)pyrene	76 J	3.2
11/11/99	0-1	Phenanthrene	670	50
11/11/99	4-6	Phenanthrene	450	50
11/11/99	0-1	Pyrene	1000	50
11/11/99	4-6	Pyrene	480	50

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- SANITARY SEWER
- STORM SEWER
- ABANDON THINNER LINES
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

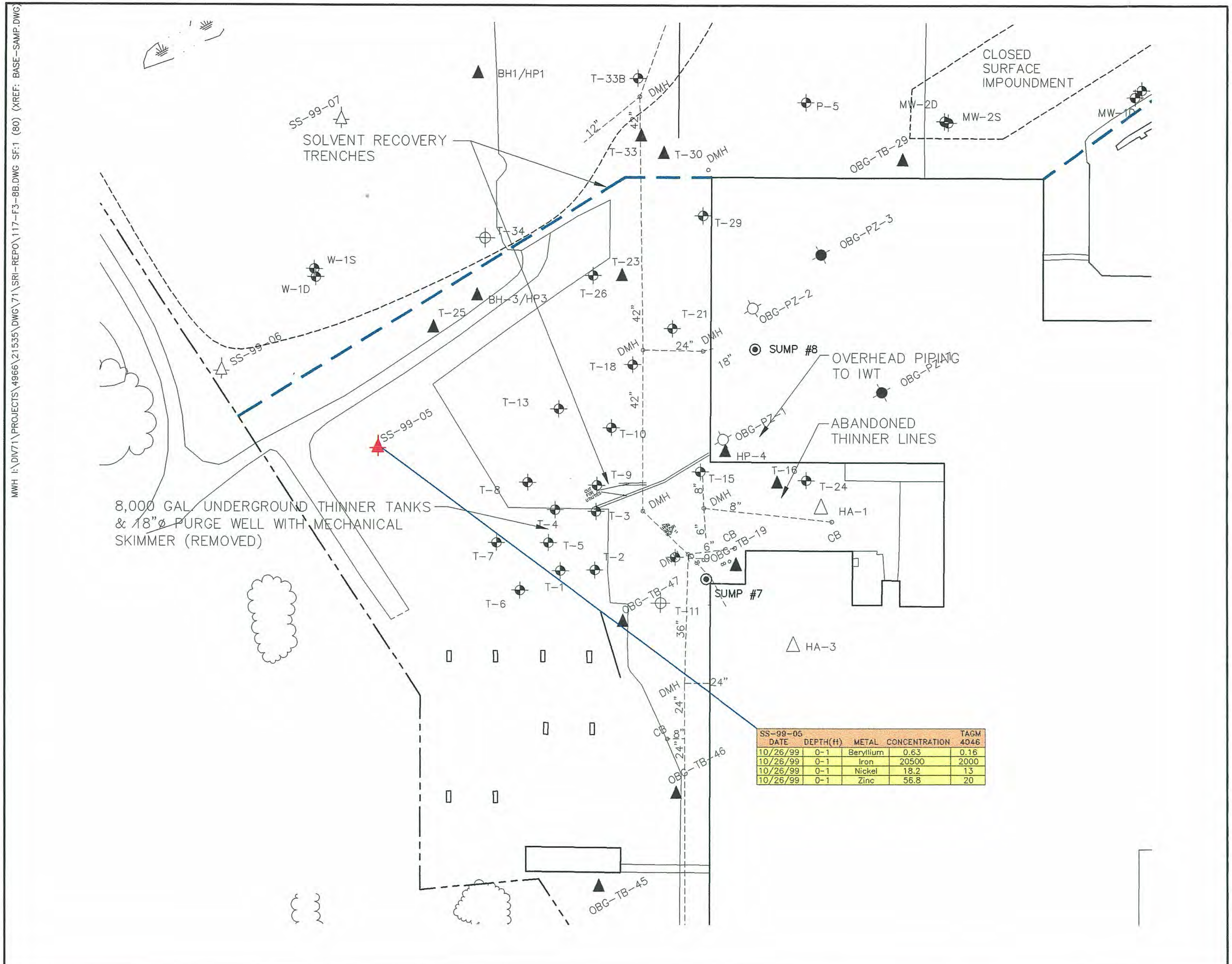
FORMER THINNER TANKS AREA – VOC AND SVOC CONCENTRATION IN SOIL GREATER THAN SCREENING LEVELS

0 80 160
SCALE IN FEET

FILE NO. 4966.21535.116
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 3-9B



SS-99-05 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Beryllium	0.63	0.16
10/26/99	0-1	Iron	20500	2000
10/26/99	0-1	Nickel	18.2	13
10/26/99	0-1	Zinc	56.8	20

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

FORMER THINNER TANKS AREA – SITE RELATED METALS/CYANIDE CONCENTRATION IN SOIL

GREATER THAN SCREENING LEVELS

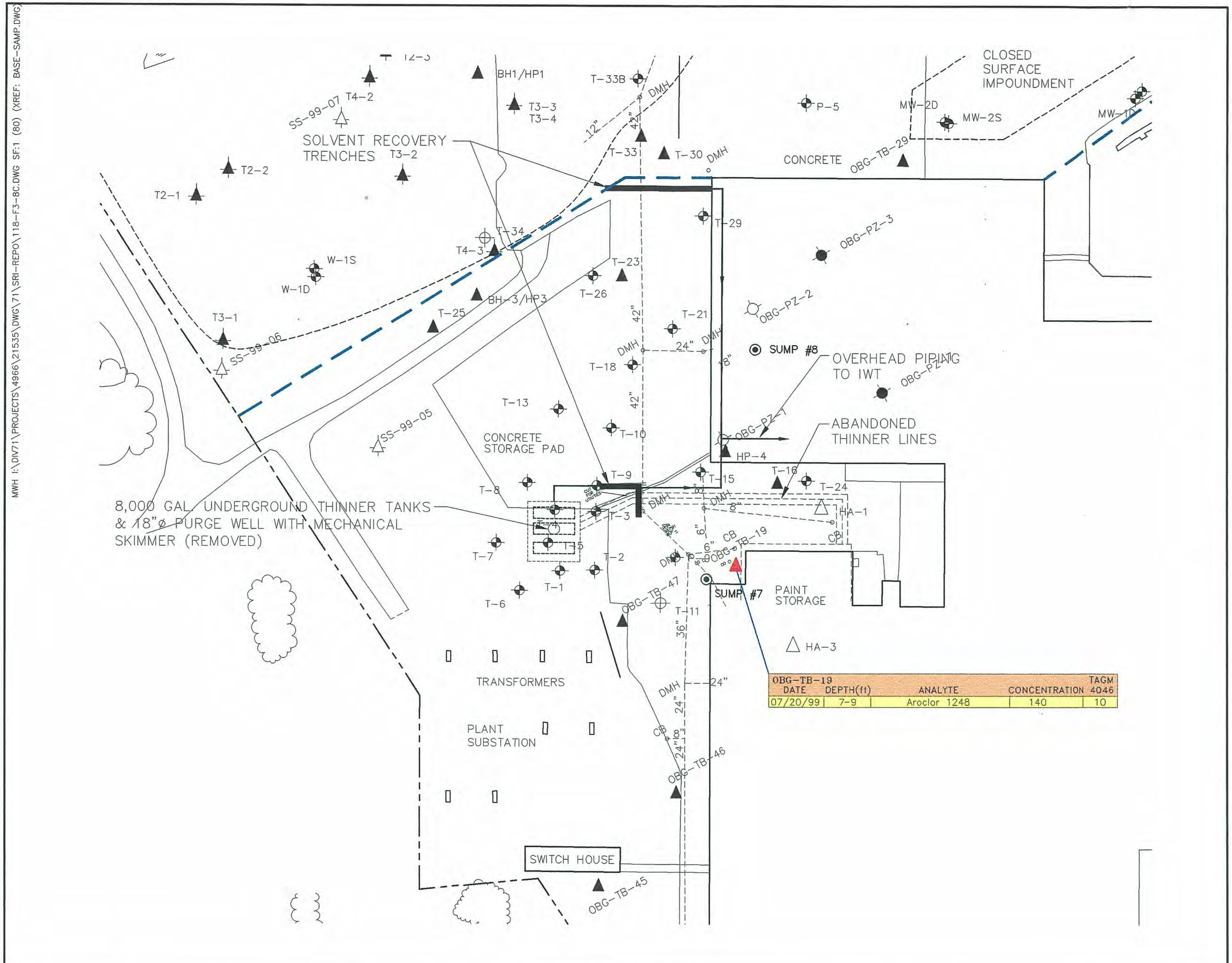
0 80 160
SCALE IN FEET

FILE NO. 4966.21535.117
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060786

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\117-F3-8B.DWG SF:1 (80) (XREF: BASE-SAMP.DWG)



MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\118-F3-9C.DWG SF:1 (80) (XREF: BASE-SAMP.DWG)

FIGURE 3-9C

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

FORMER THINNER TANKS AREA – PCB CONCENTRATION IN SOIL GREATER THAN SCREENING LEVELS

0 80 160
SCALE IN FEET

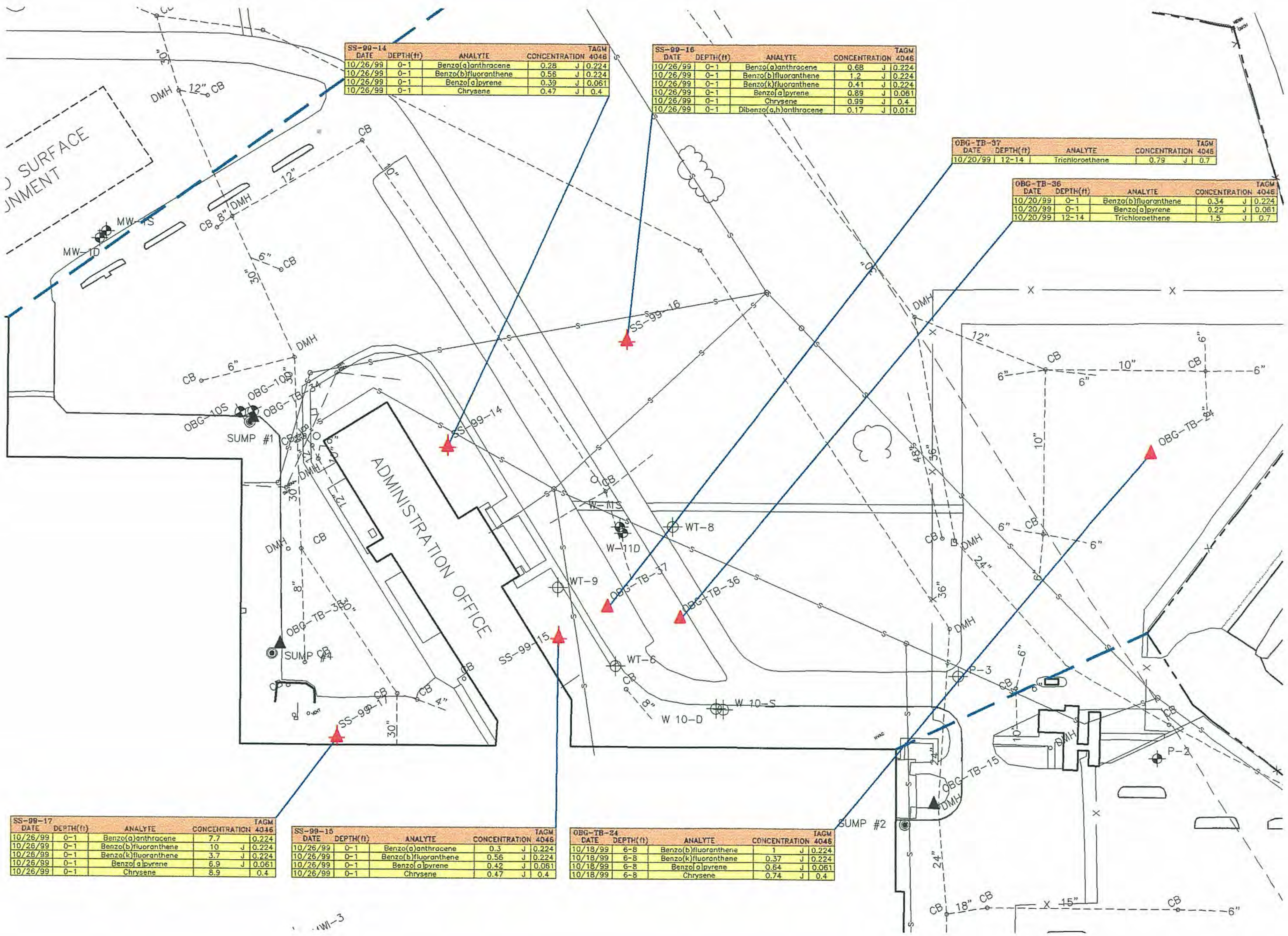
FILE NO. 4966.21535.118
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060787

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\119-F3-9A.DWG SF:1 (100) (XREF: BASE-SAMP.DWG)

FIGURE 3-10A



SS-99-14 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(a)anthracene	0.28	J	0.224
10/26/99	0-1	Benzo(b)fluoranthene	0.56	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.39	J	0.061
10/26/99	0-1	Chrysene	0.47	J	0.4

SS-99-16 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(a)anthracene	0.68	J	0.224
10/26/99	0-1	Benzo(b)fluoranthene	1.2	J	0.224
10/26/99	0-1	Benzo(k)fluoranthene	0.41	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.89	J	0.061
10/26/99	0-1	Chrysene	0.99	J	0.4
10/26/99	0-1	Dibenzo(a,h)anthracene	0.17	J	0.014

OBG-TB-37 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/20/99	12-14	Trichloroethene	0.79	J	0.7

OBG-TB-36 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/20/99	0-1	Benzo(b)fluoranthene	0.34	J	0.224
10/20/99	0-1	Benzo[a]pyrene	0.22	J	0.061
10/20/99	12-14	Trichloroethene	1.5	J	0.7

SS-99-17 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(a)anthracene	7.7		0.224
10/26/99	0-1	Benzo(b)fluoranthene	10	J	0.224
10/26/99	0-1	Benzo(k)fluoranthene	3.7	J	0.224
10/26/99	0-1	Benzo[a]pyrene	6.9	J	0.061
10/26/99	0-1	Chrysene	8.9		0.4

SS-99-15 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(a)anthracene	0.3	J	0.224
10/26/99	0-1	Benzo(b)fluoranthene	0.56	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.42	J	0.061
10/26/99	0-1	Chrysene	0.47	J	0.4

OBG-TB-24 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/18/99	6-8	Benzo(b)fluoranthene	1	J	0.224
10/18/99	6-8	Benzo(k)fluoranthene	0.37	J	0.224
10/18/99	6-8	Benzo[a]pyrene	0.64	J	0.061
10/18/99	6-8	Chrysene	0.74	J	0.4

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

NORTHEAST PROPERTY AREA – VOC AND SVOC CONCENTRATIONS IN SOIL GREATER THAN SCREENING LEVELS

0 100 200
SCALE IN FEET

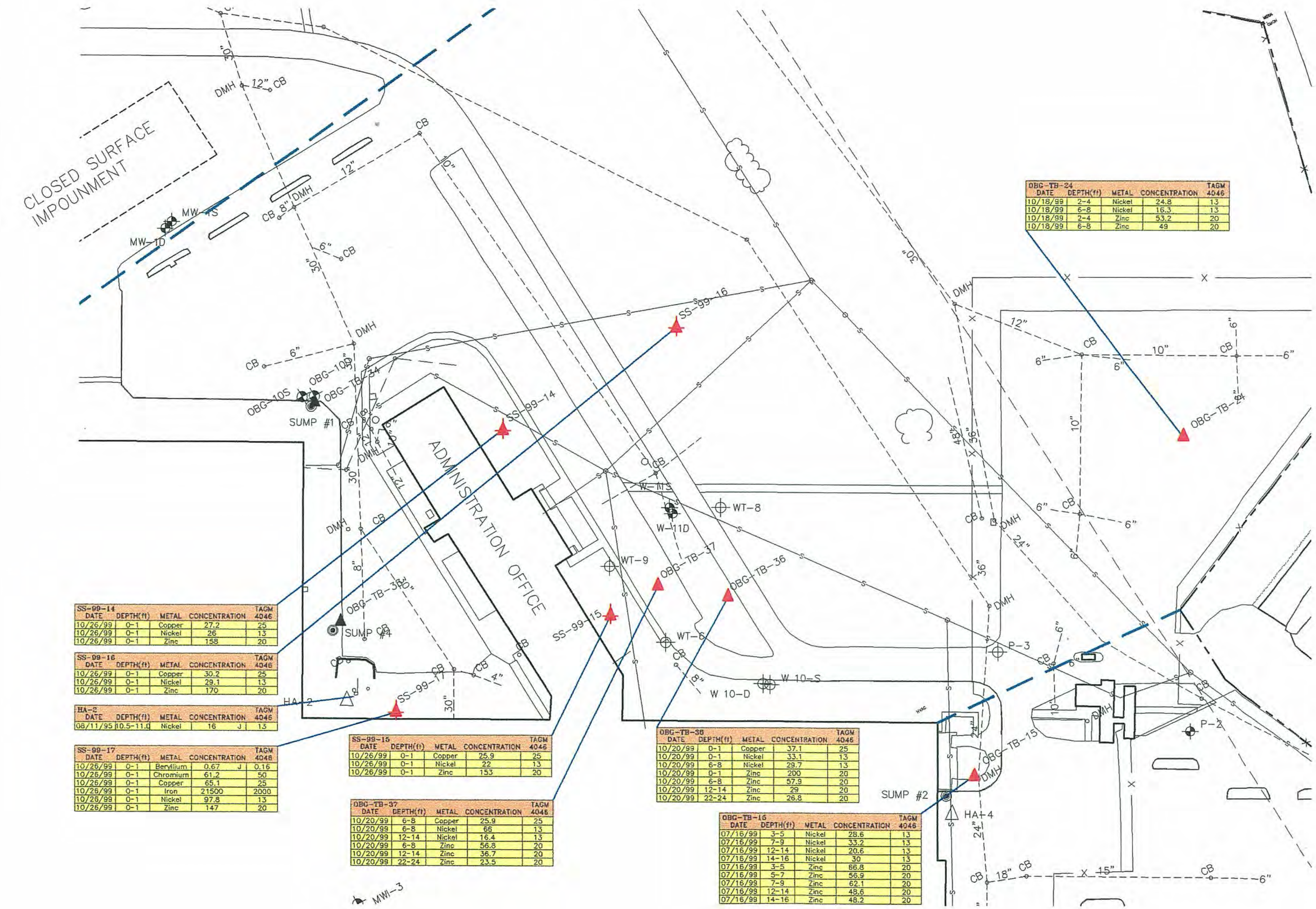
FILE NO. 4966.21535.119
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060788

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\120-F3-9B.DWG SF:1 (100) (XREF: BASE-SAMP.DWG)

FIGURE 3-10B



SS-99-14 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Copper	27.2	25
10/26/99	0-1	Nickel	26	13
10/26/99	0-1	Zinc	158	20

SS-99-16 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Copper	30.2	25
10/26/99	0-1	Nickel	29.1	13
10/26/99	0-1	Zinc	170	20

HA-2 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
08/11/95	10.5-11.0	Nickel	16 J	13

SS-99-17 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Beryllium	0.67 J	0.16
10/26/99	0-1	Chromium	61.2	50
10/26/99	0-1	Copper	65.1	25
10/26/99	0-1	Iron	21500	2000
10/26/99	0-1	Nickel	97.8	13
10/26/99	0-1	Zinc	147	20

SS-99-15 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/26/99	0-1	Copper	25.9	25
10/26/99	0-1	Nickel	22	13
10/26/99	0-1	Zinc	153	20

OBG-TB-37 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/20/99	6-8	Copper	25.9	25
10/20/99	6-8	Nickel	66	13
10/20/99	12-14	Nickel	16.4	13
10/20/99	6-8	Zinc	56.8	20
10/20/99	12-14	Zinc	36.7	20
10/20/99	22-24	Zinc	23.5	20

OBG-TB-36 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/20/99	0-1	Copper	37.1	25
10/20/99	0-1	Nickel	33.1	13
10/20/99	6-8	Nickel	29.7	13
10/20/99	0-1	Zinc	200	20
10/20/99	6-8	Zinc	57.9	20
10/20/99	12-14	Zinc	29	20
10/20/99	22-24	Zinc	26.8	20

OBG-TB-15 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
07/16/99	3-5	Nickel	28.6	13
07/16/99	7-9	Nickel	33.2	13
07/16/99	12-14	Nickel	20.6	13
07/16/99	14-16	Nickel	30	13
07/16/99	3-5	Zinc	66.8	20
07/16/99	5-7	Zinc	56.9	20
07/16/99	7-9	Zinc	62.1	20
07/16/99	12-14	Zinc	48.6	20
07/16/99	14-16	Zinc	48.2	20

OBG-TB-24 DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/18/99	2-4	Nickel	24.8	13
10/18/99	6-8	Nickel	16.3	13
10/18/99	2-4	Zinc	53.2	20
10/18/99	6-8	Zinc	49	20

LEGEND

SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
MONITORING WELL
MONITORING WELL NOT SAMPLED
SURFACE SOIL SAMPLE
SOIL BORING
PROPERTY LINE
TREE LINE
FENCE
SANITARY SEWER
STORM SEWER
AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

NORTHEAST PROPERTY AREA METALS/CYANIDE CONCENTRATIONS IN SOIL

GREATER THAN SCREENING LEVELS

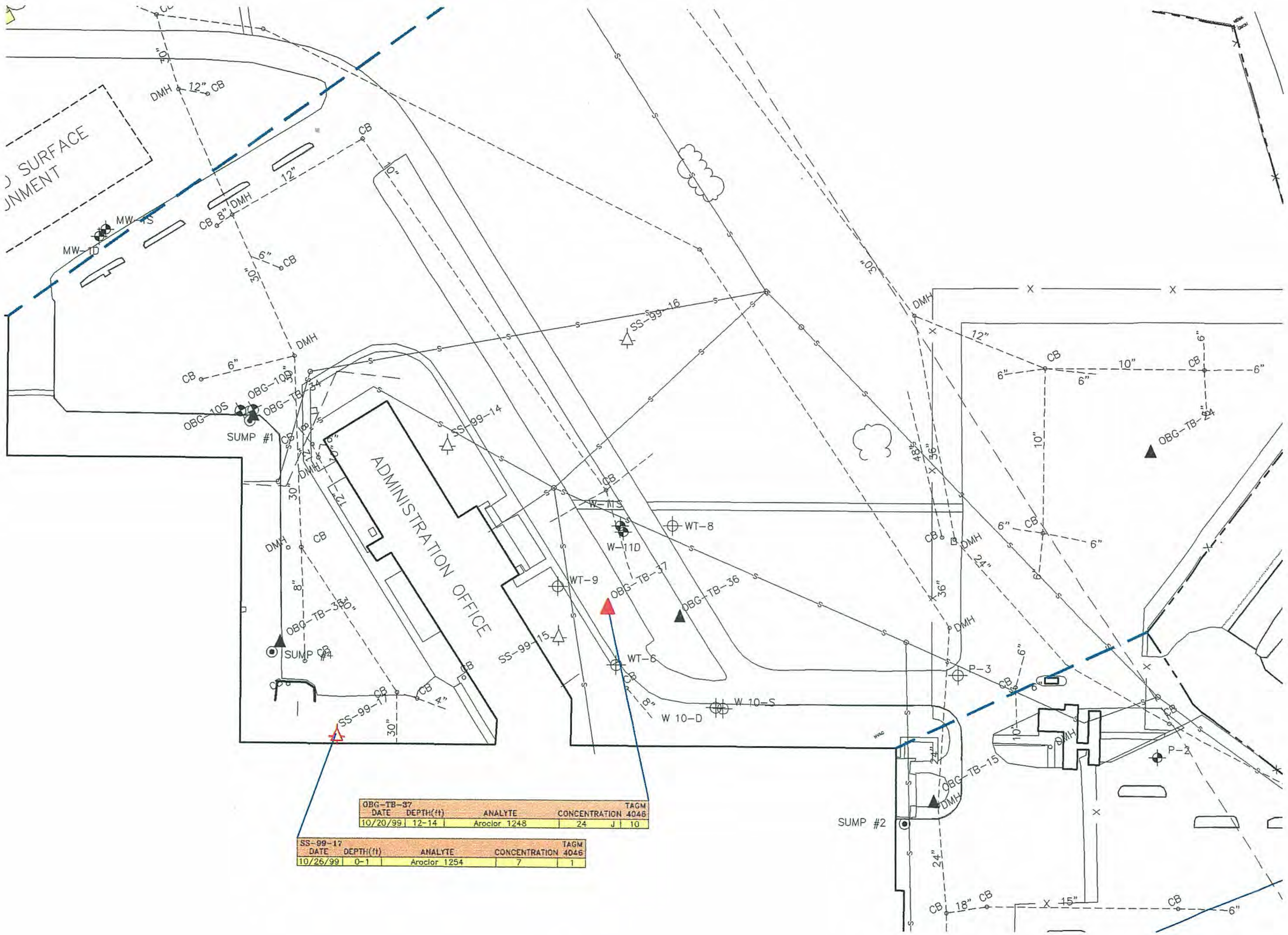
0 100 200
SCALE IN FEET

FILE NO. 4966.21535.120
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060789

FIGURE 3-10C



OBG-TB-37 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/20/99	12-14	Aroclor 1248	24 J	10

SS-99-17 DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/26/99	0-1	Aroclor 1254	7	1

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- SURFACE SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE

NOTE: UNITS = mg/Kg

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

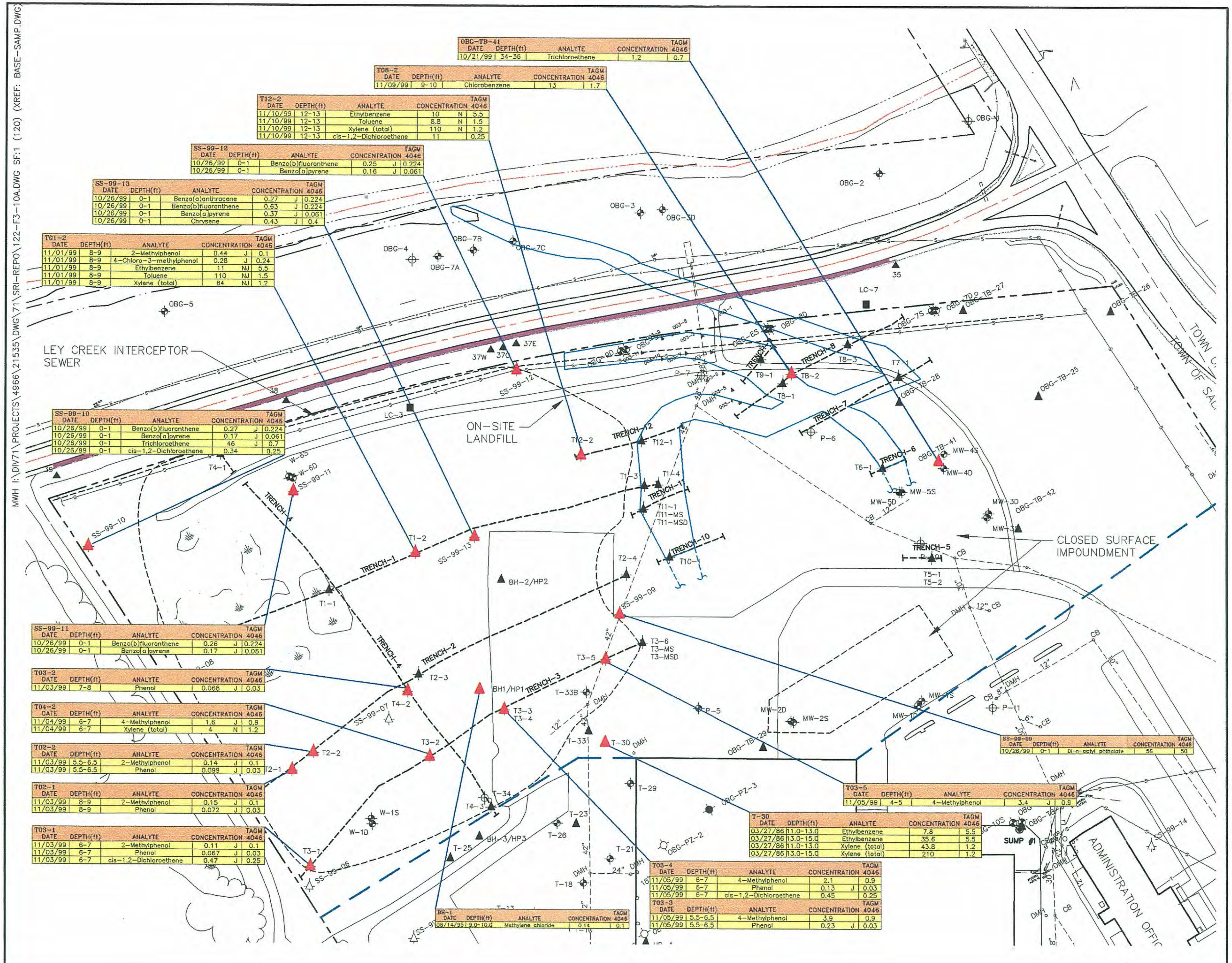
NORTHEAST PROPERTY AREA – PCB CONCENTRATIONS IN SOIL GREATER THAN SCREENING LEVELS

0 100 200
SCALE IN FEET

FILE NO. 4966.21535.121
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 3-11A



OBG-TB-41

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/21/99	34-36	Trichloroethene	1.2		0.7

T08-2

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/09/99	9-10	Chlorobenzene	13		1.7

T12-2

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/10/99	12-13	Ethylbenzene	10	N	5.5
11/10/99	12-13	Toluene	8.8	N	1.5
11/10/99	12-13	Xylene (total)	110	N	1.2
11/10/99	12-13	cis-1,2-Dichloroethene	11		0.25

SS-99-12

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(b)fluoranthene	0.25	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.16	J	0.061

SS-99-13

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(a)anthracene	0.27	J	0.224
10/26/99	0-1	Benzo(b)fluoranthene	0.63	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.37	J	0.061
10/26/99	0-1	Chrysene	0.43	J	0.4

T01-2

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/01/99	8-9	2-Methylphenol	0.44	J	0.1
11/01/99	8-9	4-Chloro-3-methylphenol	0.28	J	0.24
11/01/99	8-9	Ethylbenzene	11	NJ	5.5
11/01/99	8-9	Toluene	110	NJ	1.5
11/01/99	8-9	Xylene (total)	84	NJ	1.2

SS-99-10

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(b)fluoranthene	0.27	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.17	J	0.061
10/26/99	0-1	Trichloroethene	46	J	0.7
10/26/99	0-1	cis-1,2-Dichloroethene	0.34		0.25

SS-99-11

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
10/26/99	0-1	Benzo(b)fluoranthene	0.26	J	0.224
10/26/99	0-1	Benzo[a]pyrene	0.17	J	0.061

T03-2

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/03/99	7-8	Phenol	0.068	J	0.03

T04-2

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/04/99	6-7	4-Methylphenol	1.6	J	0.9
11/04/99	6-7	Xylene (total)	4	N	1.2

T02-2

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/03/99	5.5-6.5	2-Methylphenol	0.14	J	0.1
11/03/99	5.5-6.5	Phenol	0.099	J	0.03

T02-1

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/03/99	8-9	2-Methylphenol	0.15	J	0.1
11/03/99	8-9	Phenol	0.072	J	0.03

T03-1

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/03/99	6-7	2-Methylphenol	0.11	J	0.1
11/03/99	6-7	Phenol	0.067	J	0.03
11/03/99	6-7	cis-1,2-Dichloroethene	0.47	J	0.25

BH-1

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
08/14/95	9.0-10.0	Methylene chloride	0.14		0.1

T03-4

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/05/99	6-7	4-Methylphenol	2.1		0.9
11/05/99	6-7	Phenol	0.13	J	0.03
11/05/99	6-7	cis-1,2-Dichloroethene	0.45		0.25

T03-3

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/05/99	5.5-6.5	4-Methylphenol	3.9		0.9
11/05/99	5.5-6.5	Phenol	0.23	J	0.03

T-30

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
03/27/86	11.0-13.0	Ethylbenzene	7.8	5.5
03/27/86	13.0-15.0	Ethylbenzene	35.6	5.5
03/27/86	11.0-13.0	Xylene (total)	43.8	1.2
03/27/86	13.0-15.0	Xylene (total)	210	1.2

T03-5

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION		TAGM 4046
11/05/99	4-5	4-Methylphenol	3.4	J	0.9

SS-99-09

DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	TAGM 4046
10/26/99	0-1	Di-n-octyl phthalate	56	50

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE
- TEST TRENCH
- TEST TRENCH SAMPLE
- ESTIMATED HISTORICAL LOCATION OF FORMER DRAINAGE SWALE
- APPROXIMATE EXTENT OF SEWER IRM

NOTE: UNITS = mg/Kg

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

NORTHERN PROPERTY AREA – VOC AND SVOC CONCENTRATIONS IN SOIL GREATER THAN SCREENING LEVELS

0 120 240
SCALE IN FEET

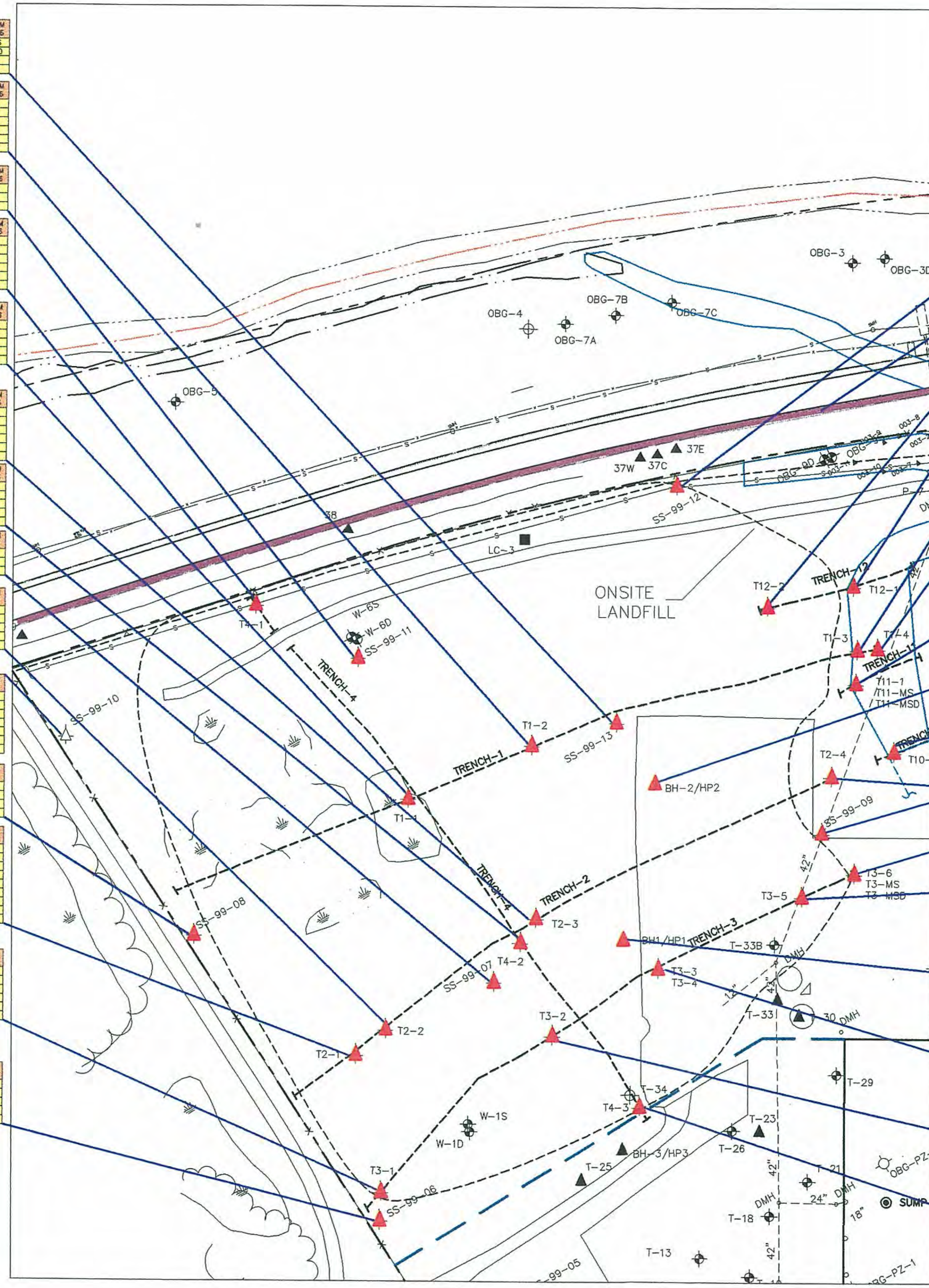
FILE NO. 4966.21535.122
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060791

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\123-F3-10B.DWG SF:1 (120) (XREF: BASE-SAMP.DWG)

FIGURE 3-11B



LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE
- TEST TRENCH
- TEST TRENCH SAMPLE
- ESTIMATED HISTORICAL LOCATION OF DRAINAGE SWALES
- APPROXIMATE EXTENT OF SEWER IRM

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

SS-99-13

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
10/26/99	0-1	Beryllium	0.44	J	0.16
10/26/99	0-1	Iron	14300		2000
10/26/99	0-1	Nickel	72.7		13
10/26/99	0-1	Zinc	67.1		20

T01-2

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/01/99	8-9	Arsenic	9.4		7.5
11/01/99	8-9	Chromium	512		50
11/01/99	8-9	Copper	23200		25
11/01/99	8-9	Mercury	0.16		0.1
11/01/99	8-9	Nickel	1180		13
11/01/99	8-9	Zinc	24000		20

SS-99-11

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
10/26/99	0-1	Arsenic	15		7.5
10/26/99	0-1	Nickel	20.6		13
10/26/99	0-1	Zinc	35.7		20

T04-1

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/04/99	2.5-3.5	Arsenic	9.9		7.5
11/04/99	2.5-3.5	Chromium	3170		50
11/04/99	2.5-3.5	Copper	4990		25
11/04/99	2.5-3.5	Mercury	0.12	J	0.1
11/04/99	2.5-3.5	Nickel	3820		13
11/04/99	2.5-3.5	Zinc	2520		20

T01-1

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/01/99	8-9	Arsenic	14.5		7.5
11/01/99	8-9	Chromium	95.8		50
11/01/99	8-9	Copper	114		25
11/01/99	8-9	Nickel	167		13
11/01/99	8-9	Zinc	468		20

T02-3

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/03/99	9-10	Arsenic	16		7.5
11/03/99	9-10	Chromium	17200		50
11/03/99	9-10	Copper	3530		25
11/03/99	9-10	Mercury	0.14	J	0.1
11/03/99	9-10	Nickel	7940		13
11/03/99	9-10	Zinc	1440		20

T04-2

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/04/99	6-7	Arsenic	13.8		7.5
11/04/99	6-7	Chromium	436		50
11/04/99	6-7	Copper	3920		25
11/04/99	6-7	Nickel	500		13
11/04/99	6-7	Zinc	1330		20

SS-99-07

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
10/26/99	0-1	Copper	30.3		25
10/26/99	0-1	Nickel	21.9		13
10/26/99	0-1	Zinc	63.5		20

T02-2

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/03/99	5.5-6.5	Arsenic	21.1		7.5
11/03/99	5.5-6.5	Chromium	2560		50
11/03/99	5.5-6.5	Copper	3140		25
11/03/99	5.5-6.5	Nickel	533		13
11/03/99	5.5-6.5	Zinc	348		20

SS-99-10

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
10/26/99	0-1	Arsenic	14.6		7.5
10/26/99	0-1	Beryllium	0.94	J	0.16
10/26/99	0-1	Copper	31.7		25
10/26/99	0-1	Iron	31200		2000
10/26/99	0-1	Nickel	35.4		13
10/26/99	0-1	Selenium	2.4		2
10/26/99	0-1	Zinc	84.1		20

SS-99-08

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
10/26/99	0-1	Chromium	76.2		50
10/26/99	0-1	Copper	59.3		25
10/26/99	0-1	Nickel	121		13
10/26/99	0-1	Zinc	109		20

T02-1

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/03/99	8-9	Arsenic	65.7		7.5
11/03/99	8-9	Barium	311		300
11/03/99	8-9	Beryllium	0.95	J	0.16
11/03/99	8-9	Copper	168		25
11/03/99	8-9	Iron	45900		2000
11/03/99	8-9	Mercury	0.13		0.1
11/03/99	8-9	Nickel	82.6		13
11/03/99	8-9	Selenium	2.9		2
11/03/99	8-9	Zinc	461		20

T03-1

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/03/99	6-7	Arsenic	45.5		7.5
11/03/99	6-7	Chromium	181		50
11/03/99	6-7	Copper	1450		25
11/03/99	6-7	Mercury	0.12	J	0.1
11/03/99	6-7	Nickel	506		13
11/03/99	6-7	Zinc	2410		20

SS-99-06

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
10/26/99	0-1	Arsenic	10.5		7.5
10/26/99	0-1	Chromium	1770		50
10/26/99	0-1	Copper	267		25
10/26/99	0-1	Nickel	443		13
10/26/99	0-1	Zinc	394		20

SS-99-12

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
10/26/99	0-1	Zinc	25		20

B-17

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
10/05/90	5.0-7.0	Chromium	78.323		50
10/05/90	5.0-7.0	Nickel	24.523		13

T12-2

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/10/99	12-13	Arsenic	16.9		7.5
11/10/99	12-13	Chromium	14200	J	50
11/10/99	12-13	Copper	2920		25
11/10/99	12-13	Nickel	14400		13
11/10/99	12-13	Zinc	2720	J	20

T12-1

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/10/99	4-5	Chromium	853	J	50
11/10/99	4-5	Copper	1040		25
11/10/99	4-5	Nickel	514		13
11/10/99	4-5	Zinc	565	J	20

T01-3

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/02/99	8.5-9.5	Copper	76.2		25
11/02/99	8.5-9.5	Nickel	56		13
11/02/99	8.5-9.5	Zinc	789		20

T01-4

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/02/99	9-10	Nickel	22.2		13
11/02/99	9-10	Zinc	52.1		20

T11-1

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/10/99	8-9	Arsenic	7.8		7.5
11/10/99	8-9	Chromium	2250	J	50
11/10/99	8-9	Copper	456		25
11/10/99	8-9	Nickel	1720		13
11/10/99	8-9	Zinc	447	J	20

BH-2

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
08/14/95	8.0-10.0	Chromium	2900	J	50
08/14/95	8.0-10.0	Copper	6600	J	25
08/14/95	8.0-10.0	Nickel	1300	J	13

T10-1

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/09/99	5.5-6.5	Nickel	19.3		13
11/09/99	5.5-6.5	Zinc	49	J	20

T02-4

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/04/99	5-6	Copper	34.7		25
11/04/99	5-6	Nickel	25.1		13
11/04/99	5-6	Zinc	63.7		20

SS-99-09

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
10/26/99	0-1	Copper	96.2		25
10/26/99	0-1	Nickel	32.6		13
10/26/99	0-1	Zinc	307		20

T03-6

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/09/99	4-5	Nickel	23.1		13
11/09/99	4-5	Zinc	67.7	J	20

T03-5

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/05/99	4-5	Arsenic	16.7		7.5
11/05/99	4-5	Chromium	409		50
11/05/99	4-5	Copper	2130		25
11/05/99	4-5	Nickel	635		13
11/05/99	4-5	Zinc	1800		20

BH-1

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
08/14/95	9.0-10.0	Arsenic	48		7.5
08/14/95	9.0-10.0	Chromium	52	J	50
08/14/95	9.0-10.0	Copper	200	J	25
08/14/95	9.0-10.0	Mercury	0.11		0.1
08/14/95	9.0-10.0	Nickel	140	J	13
08/14/95	9.0-10.0	Selenium	2.3	J	2

T03-3

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/05/99	5.5-6.5	Chromium	778		50
11/05/99	5.5-65	Copper	5410		25
11/05/99	5.5-6.5	Nickel	1040		13
11/05/99	5.5-6.5	Zinc	8470		20

T03-4

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4045
11/05/99	6-7	Arsenic	7.7		7.5
11/05/99	6-7	Chromium	794		50
11/05/99	6-7	Copper	4520		25
11/05/99	6-7	Nickel	1040		13
11/05/99	6-7	Zinc	7990		20

T03-2

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/03/99	7-8	Beryllium	0.19	J	0.16
11/03/99	7-8	Copper	1520		25
11/03/99	7-8	Iron	10100		2000
11/03/99	7-8	Nickel	242		13
11/03/99	7-8	Zinc	53300		20

T04-3

DATE	DEPTH(ft)	METAL	CONCENTRATION		TAGM 4046
11/05/99	3-4	Arsenic	21		7.5
11/05/99	3-4	Chromium	355		50
11/05/99	3-4	Copper	2010		25
11/05/99	3-4	Mercury	0.14		0.1
11/05/99	3-4	Nickel	592		13
11/05/99	3-4	Zinc	3510		20

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

NORTHERN PROPERTY AREA – SITE RELATED METALS/CYANIDE CONCENTRATIONS IN SOIL GREATER THAN SCREENING LEVELS

0 120 240
SCALE IN FEET

FILE NO. 4966.21535.123B
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060792

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\123-F3-10C.DWG SF:1 (120) (XREF: BASE-SAMP.DWG)

FIGURE 3-11C

T08-2

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/09/99	9-10	Arsenic	11.9	7.5
11/09/99	9-10	Chromium	34900 J	50
11/09/99	9-10	Copper	6990	25
11/09/99	9-10	Nickel	19700	13
11/09/99	9-10	Zinc	4730 J	20

T09-1

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/09/99	10-11	Nickel	20.6	13
11/09/99	10-11	Zinc	85.4 J	20

T08-1

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/09/99	9-10	Arsenic	12.9	7.5
11/09/99	9-10	Chromium	2910 J	50
11/09/99	9-10	Copper	541	25
11/09/99	9-10	Nickel	1240	13
11/09/99	9-10	Zinc	422 J	20

T12-1

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/10/99	4-5	Chromium	853 J	50
11/10/99	4-5	Copper	1040	25
11/10/99	4-5	Nickel	514	13
11/10/99	4-5	Zinc	565 J	20

T12-2

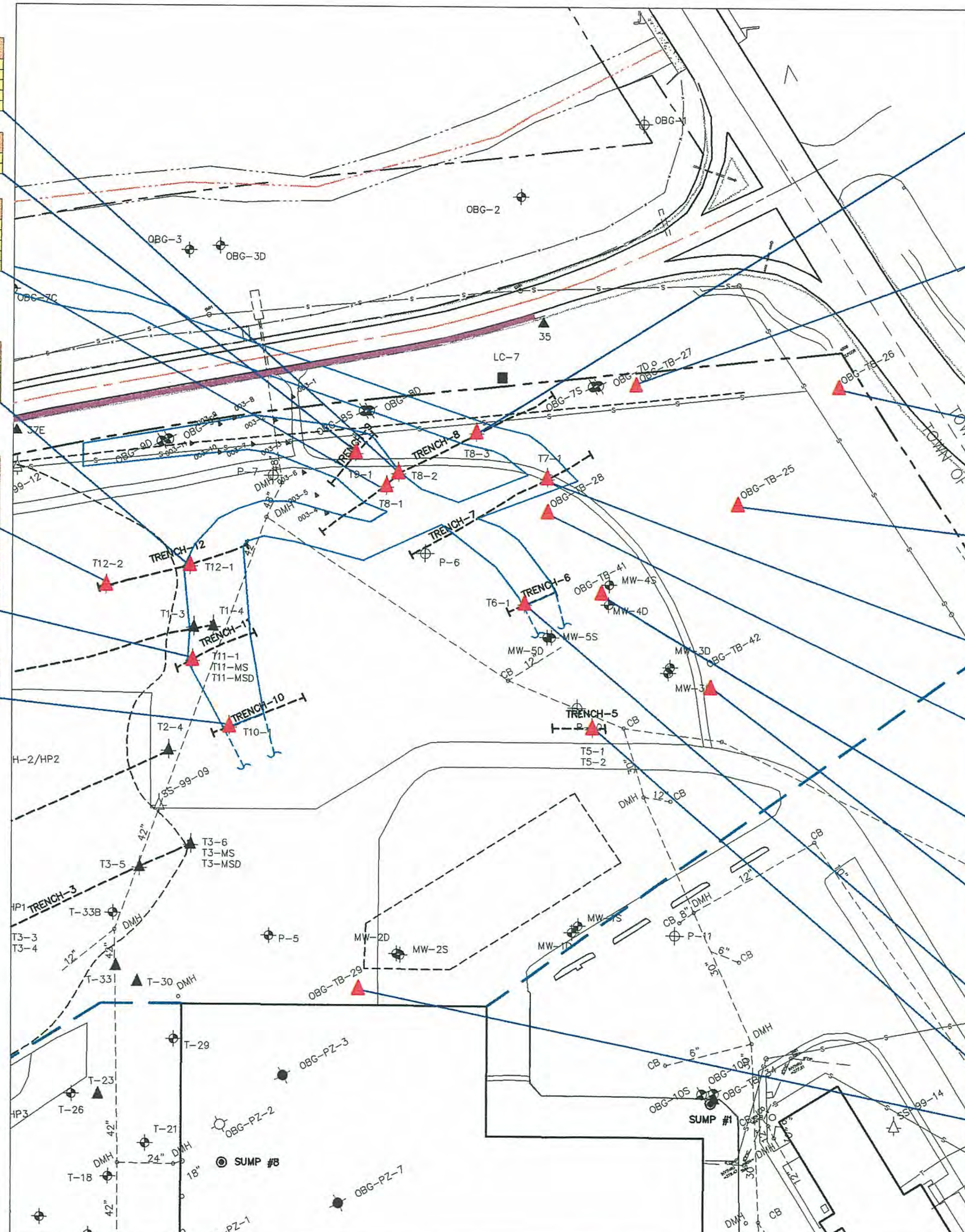
DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/10/99	12-13	Arsenic	16.9	7.5
11/10/99	12-13	Chromium	14200 J	50
11/10/99	12-13	Copper	2920	25
11/10/99	12-13	Nickel	14400	13
11/10/99	12-13	Zinc	2720 J	20

T11-1

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/10/99	8-9	Arsenic	7.8	7.5
11/10/99	8-9	Chromium	2250 J	50
11/10/99	8-9	Copper	456	25
11/10/99	8-9	Nickel	1720	13
11/10/99	8-9	Zinc	447 J	20

T10-1

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/09/99	5.5-6.5	Nickel	19.3	13
11/09/99	5.5-6.5	Zinc	49 J	20



T08-3

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/09/99	8-9	Chromium	775 J	50
11/09/99	8-9	Copper	270	25
11/09/99	8-9	Nickel	584	13
11/09/99	8-9	Zinc	145 J	20

OBG-TB-27

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/19/99	0-1	Copper	28.2	25
10/19/99	4-6	Copper	32.9	25
10/19/99	0-1	Nickel	54.1	13
10/19/99	4-6	Nickel	21.3	13
10/19/99	0-1	Zinc	41.4	20
10/19/99	4-6	Zinc	212	20
10/19/99	12-14	Zinc	21.5	20

OBG-TB-26

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/19/99	4-6	Arsenic	9.9	7.5
10/19/99	0-1	Copper	32.1	25
10/19/99	4-6	Copper	62	25
10/19/99	0-1	Nickel	35.1	13
10/19/99	4-6	Nickel	26.6	13
10/19/99	0-1	Zinc	95.7	20
10/19/99	4-6	Zinc	115	20

OBG-TB-25

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/19/99	0-1	Copper	36.7	25
10/19/99	2-4	Copper	49.2	25
10/19/99	0-1	Nickel	38.6	13
10/19/99	2-4	Nickel	18.9	13
10/19/99	10-12	Nickel	14.3	13
10/19/99	0-1	Zinc	74.6	20
10/19/99	2-4	Zinc	68.4	20
10/19/99	10-12	Zinc	30.6	20

T07-1

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/08/99	8-9	Arsenic	11	7.5
11/08/99	8-9	Chromium	2480 J	50
11/08/99	8-9	Copper	2460	25
11/08/99	8-9	Nickel	1190	13
11/08/99	8-9	Zinc	496 J	20

OBG-TB-28

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/19/99	12-14	Chromium	106	50
10/19/99	12-14	Copper	47.9	25
10/19/99	4-6	Nickel	23.4	13
10/19/99	12-14	Nickel	50.5	13
10/19/99	0-1	Zinc	29.2	20
10/19/99	4-6	Zinc	50	20
10/19/99	12-14	Zinc	66.6	20

OBG-TB-41

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/21/99	6-8	Nickel	26.3	13
10/21/99	0-2	Zinc	26.6	20
10/21/99	6-8	Zinc	53.7	20

OBG-TB-42

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/25/99	0-1	Nickel	13.1	13
10/25/99	6-8	Nickel	28.5	13
10/25/99	32-34	Nickel	16.5	13
10/25/99	0-1	Zinc	52.7	20
10/25/99	6-8	Zinc	54.3	20
10/25/99	10-12	Zinc	21.4	20
10/25/99	32-34	Zinc	35	20

T06-1

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/08/99	8-9	Chromium	3250 J	50
11/08/99	8-9	Copper	781	25
11/08/99	8-9	Nickel	1580	13
11/08/99	8-9	Zinc	547 J	20

T05-1

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
11/11/99	3.5-4.5	Nickel	20.3	13
11/11/99	3.5-4.5	Zinc	33.9 J	20

OBG-TB-29

DATE	DEPTH(ft)	METAL	CONCENTRATION	TAGM 4046
10/19/99	6-8	Zinc	49.2	20

LEGEND

- SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- AREA BOUNDARY LINE
- TEST TRENCH
- TEST TRENCH SAMPLE
- ESTIMATED HISTORICAL LOCATION OF DRAINAGE SWALE
- APPROXIMATE EXTENT OF SEWER IRM

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

NORTHERN PROPERTY AREA – SITE RELATED METALS/CYANIDE CONCENTRATIONS IN SOIL GREATER THAN SCREENING LEVELS

0 120 240
SCALE IN FEET

FILE NO. 4966.21535.123C
DATE: APRIL 2000

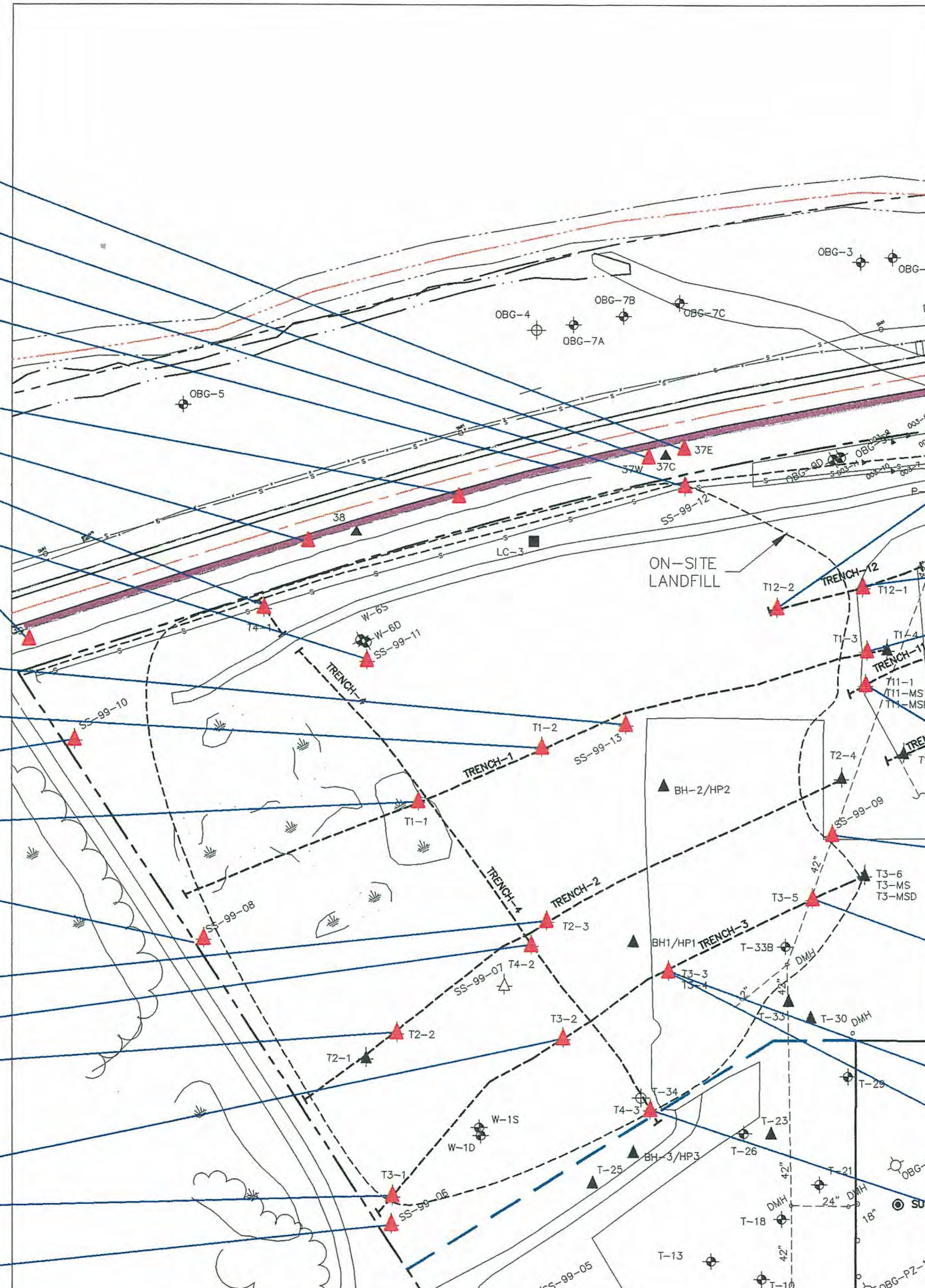
OBRIEN & GERE ENGINEERS, INC.

RACER0060793

I:\DIV17\PROJECTS\4966\21535\DWG\71\SRI-REPO\124-F3-10C.DWG SF:1 (120) (... BASE-SAMP.DWG)

3-11D

Sample	DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	TAGM 4046
37E S COMP	04/19/96	0.0-7.0	Aroclor 1248	11	mg/Kg	1
37E S	04/19/96	4.0-	Aroclor 1248	10.6	mg/Kg	10
37E S	04/19/96	5-	Aroclor 1248	16	mg/Kg	10
37W S COMP	04/19/96	0.0-7.0	Aroclor 1248	1.1	mg/Kg	1
37W S COMP	04/19/96	0.0-7.0	Total PCBs	1.1	mg/Kg	1
123.4	11/01/91	8-	Total PCBs	190	mg/Kg	10
124.0	11/01/91	8-	Total PCBs	330	mg/Kg	10
SS-99-12	10/26/99	0-1	Aroclor 1248	3	mg/Kg	1
122.0	11/01/91	17-	Total PCBs	87	mg/Kg	10
T04-1	11/04/99	2.5-3.5	Aroclor 1248	1500	mg/Kg	10
SS-99-11	10/26/99	0-1	Aroclor 1248	3	mg/Kg	1
39 S	04/18/96	5-	Aroclor 1242	10.5	mg/Kg	10
39 S	04/18/96	5-	Total PCBs	10.5	mg/Kg	10
39 S COMP	04/18/96	0.0-7.0	Aroclor 1248	1	mg/Kg	1
SS-99-13	10/26/99	0-1	Aroclor 1248	3	mg/Kg	1
T01-2	11/01/99	8-9	Aroclor 1248	1500	mg/Kg	10
SS-99-10	10/26/99	0-1	Aroclor 1248	5	mg/Kg	1
T01-1	11/01/99	8-9	Aroclor 1248	1200 J	mg/Kg	10
SS-99-08	10/26/99	0-1	Aroclor 1248	200 J	mg/Kg	1
T02-3	11/03/99	9-10	Aroclor 1248	2700	mg/Kg	10
T04-2	11/04/99	6-7	Aroclor 1248	34	mg/Kg	10
T02-2	11/03/99	5.5-6.5	Aroclor 1248	26	mg/Kg	10
T03-2	11/03/99	7-8	Aroclor 1248	79	mg/Kg	10
T03-1	11/03/99	6-7	Aroclor 1248	17	mg/Kg	10
SS-99-06	10/26/99	0-1	Aroclor 1248	2600 J	mg/Kg	1
T12-2	11/10/99	12-13	Aroclor 1248	4300	mg/Kg	10
T12-1	11/10/99	4-5	Aroclor 1248	3800	mg/Kg	10
T01-3	11/02/99	8.5-9.5	Aroclor 1248	1000	mg/Kg	10
T11-1	11/10/99	8-9	Aroclor 1242	190	mg/Kg	10
SS-99-09	10/26/99	0-1	Aroclor 1248	30	mg/Kg	1
T03-5	11/05/99	4-5	Aroclor 1242	1400	mg/Kg	10
T03-3	11/05/99	5.5-6.5	Aroclor 1254	98	mg/Kg	10
T03-4	11/05/99	6-7	Aroclor 1254	99 J	mg/Kg	10
T04-3	11/05/99	3-4	Aroclor 1248	150	mg/Kg	10



SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS

MONITORING WELL

MONITORING WELL NOT SAMPLED

SURFACE SOIL SAMPLE

SOIL BORING

PROPERTY LINE

TREE LINE

FENCE

SANITARY SEWER

STORM SEWER

AREA BOUNDARY LINE

APPROXIMATE EXTENT OF SEWER IRM

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

NORTHERN PROPERTY AREA – PCB CONCENTRATIONS IN SOIL

GREATER THAN SCREENING LEVELS

0 120 240
SCALE IN FEET

DATE: APRIL 2000

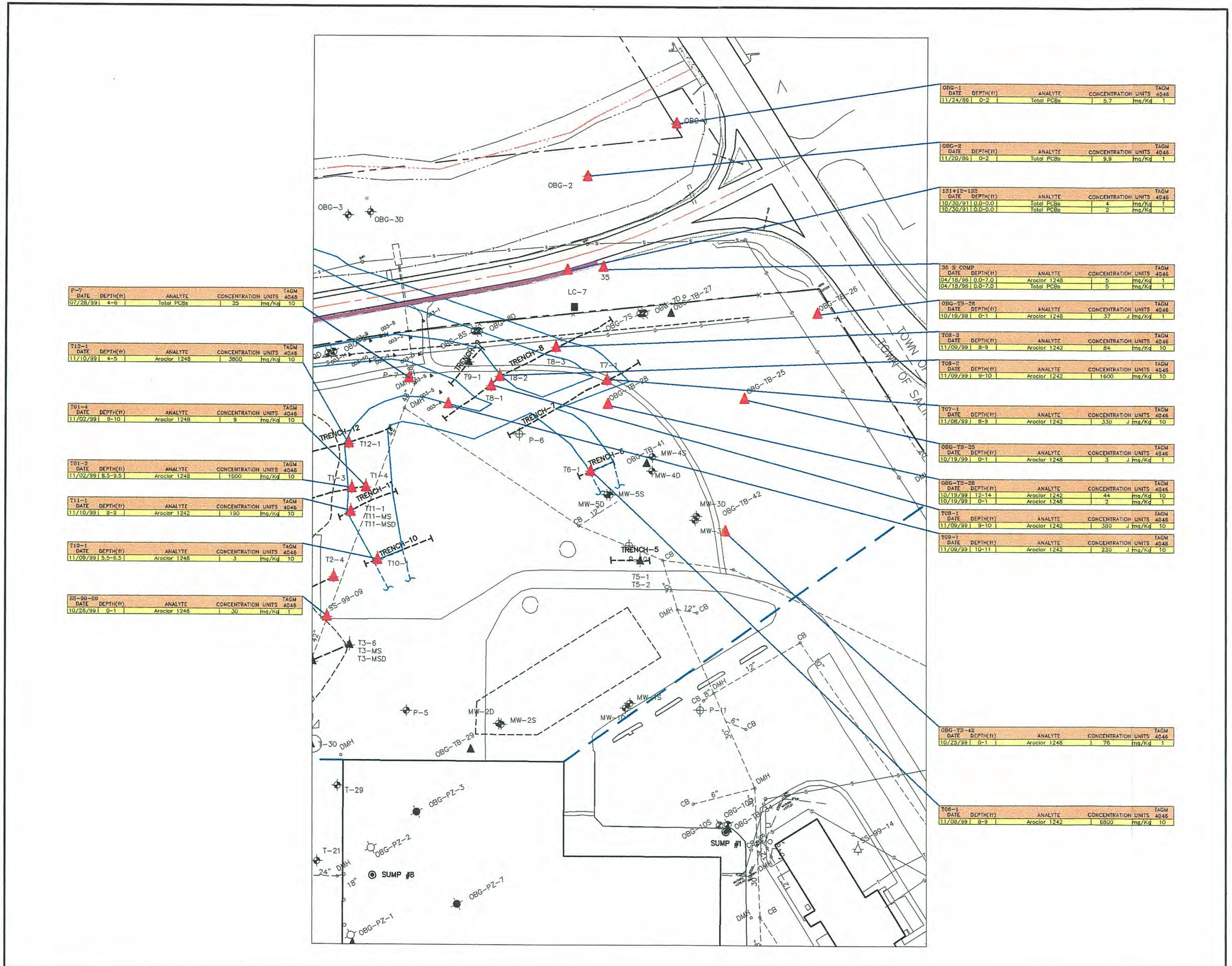
FILE NO: 4966.21535.124

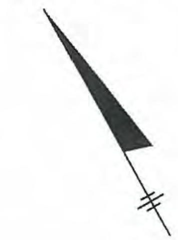
O'BRIEN & GERE ENGINEERS, INC.

RACER0060794

I:\DIV17\PROJECTS\4966\21535\DWG\71\SRI-REPO\125-F3-10D.DWG SF:1 (120) (XREF: BASE-SAMP.DWG)

FIGURE 3–11E





SOIL SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS

MONITORING WELL

MONITORING WELL NOT SAMPLED

SURFACE SOIL SAMPLE

SOIL BORING

PROPERTY LINE

TREE LINE

FENCE

SANITARY SEWER

STORM SEWER

AREA BOUNDARY LINE

APPROXIMATE EXTENT OF SEWER IRM

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

NORTHERN PROPERTY AREA – PCB CONCENTRATIONS IN SOIL

GREATER THAN SCREENING LEVELS

0 120 240
SCALE IN FEET

DATE: APRIL 2000

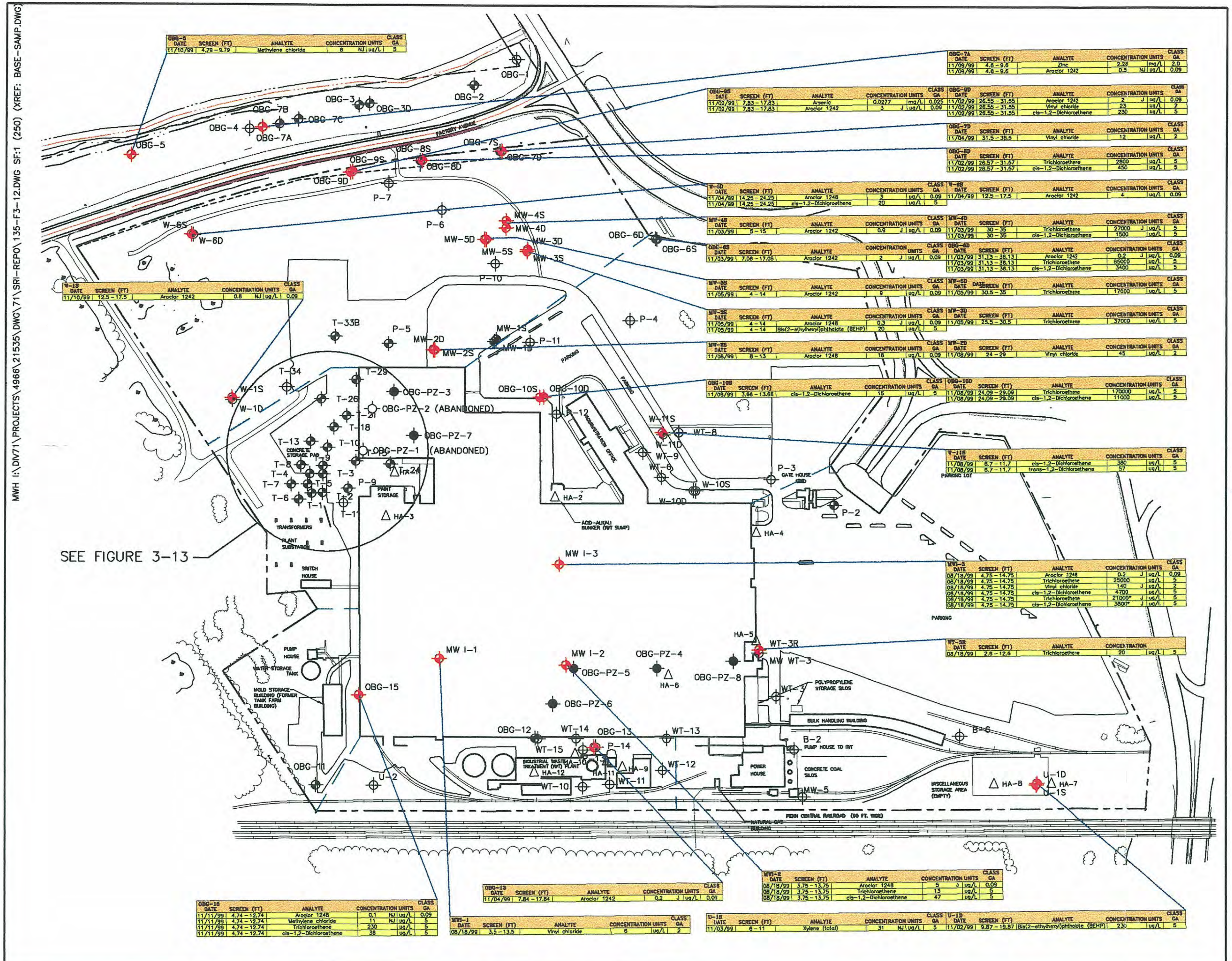
FILE NO: 4966.21535.125

O'BRIEN & GERE ENGINEERS, INC.

RACER0060795

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\135-F3-12.DWG SF:1 (250) (XREF: BASE-SAMP.DWG)

FIGURE 3-12



OBG-5 DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/10/99	4.79 - 9.79	Methylene chloride	8	NJ	ug/L	5

W-1S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/10/99	12.5 - 17.5	Aroclor 1242	0.8	NJ	ug/L	0.09

OBG-7A DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/09/99	4.6 - 9.6	Zinc	2.28		mg/L	2.0
11/09/99	4.6 - 9.6	Aroclor 1242	0.5	NJ	ug/L	0.09

OBG-9S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/02/99	7.83 - 17.83	Arsenic	0.0277		mg/L	0.025
11/02/99	7.83 - 17.83	Aroclor 1242	3	J	ug/L	0.09

OBG-9D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/02/99	26.55 - 31.55	Aroclor 1242	2	J	ug/L	0.09
11/02/99	26.55 - 31.55	Vinyl chloride	23		ug/L	2
11/02/99	26.55 - 31.55	cis-1,2-Dichloroethene	230		ug/L	5

OBG-7D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/04/99	31.5 - 36.5	Vinyl chloride	12		ug/L	2

OBG-8D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/02/99	26.57 - 31.57	Trichloroethene	2800		ug/L	5
11/02/99	26.57 - 31.57	cis-1,2-Dichloroethene	450		ug/L	5

W-6D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/04/99	14.25 - 24.25	Aroclor 1248	3		ug/L	0.09
11/04/99	14.25 - 24.25	cis-1,2-Dichloroethene	20		ug/L	5

W-6S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/04/99	12.5 - 17.5	Aroclor 1242	4		ug/L	0.09

MW-4S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/03/99	5 - 15	Aroclor 1242	0.9	J	ug/L	0.09

MW-4D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/03/99	30 - 35	Trichloroethene	27000	J	ug/L	5
11/03/99	30 - 35	cis-1,2-Dichloroethene	1500		ug/L	5

OBG-6S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/03/99	7.06 - 17.06	Aroclor 1242	2	J	ug/L	0.09

OBG-6D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/03/99	31.13 - 36.13	Aroclor 1242	0.2	J	ug/L	0.09
11/03/99	31.13 - 36.13	Trichloroethene	65000		ug/L	5
11/03/99	31.13 - 36.13	cis-1,2-Dichloroethene	3400		ug/L	5

MW-5S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/05/99	4 - 14	Aroclor 1242	9		ug/L	0.09

MW-5D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/05/99	30.5 - 35	Trichloroethene	17000		ug/L	5

MW-3S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/05/99	4 - 14	Aroclor 1248	0.3	J	ug/L	0.09
11/05/99	4 - 14	Bis(2-ethylhexyl)phthalate (BEHP)	20		ug/L	5

MW-3D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/05/99	25.5 - 30.5	Trichloroethene	37000		ug/L	5

MW-2S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/08/99	8 - 13	Aroclor 1248	18		ug/L	0.09

MW-2D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/08/99	24 - 29	Vinyl chloride	45		ug/L	2

OBG-10S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/08/99	3.66 - 13.66	cis-1,2-Dichloroethene	15		ug/L	5

OBG-10D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/08/99	24.09 - 29.09	Trichloroethene	170000		ug/L	5
11/08/99	24.09 - 29.09	cis-1,2-Dichloroethene	11000		ug/L	5

W-11S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/08/99	6.7 - 11.7	cis-1,2-Dichloroethene	380		ug/L	5
11/08/99	6.7 - 11.7	trans-1,2-Dichloroethene	57		ug/L	5

MWI-3 DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
08/18/99	4.75 - 14.75	Aroclor 1248	0.2	J	ug/L	0.09
08/18/99	4.75 - 14.75	Trichloroethene	25000		ug/L	5
08/18/99	4.75 - 14.75	Vinyl chloride	140	J	ug/L	2
08/18/99	4.75 - 14.75	cis-1,2-Dichloroethene	4700		ug/L	5
08/18/99	4.75 - 14.75	Trichloroethene	21000*	J	ug/L	5
08/18/99	4.75 - 14.75	cis-1,2-Dichloroethene	3800*	J	ug/L	5

WT-3R DATE	SCREEN (FT)	ANALYTE	CONCENTRATION			
08/18/99	2.6 - 12.6	Trichloroethene	20		ug/L	5

OBG-15 DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/11/99	4.74 - 12.74	Aroclor 1248	0.1	NJ	ug/L	0.09
11/11/99	4.74 - 12.74	Methylene chloride	11	NJ	ug/L	5
11/11/99	4.74 - 12.74	Trichloroethene	230		ug/L	5
11/11/99	4.74 - 12.74	cis-1,2-Dichloroethene	38		ug/L	5

MWI-1 DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
08/18/99	3.5 - 13.5	Vinyl chloride	6		ug/L	2

OBG-13 DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/04/99	7.84 - 17.84	Aroclor 1242	0.2	J	ug/L	0.09

MWI-2 DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
08/18/99	3.75 - 13.75	Aroclor 1248	5	J	ug/L	0.09
08/18/99	3.75 - 13.75	Trichloroethene	13		ug/L	5
08/18/99	3.75 - 13.75	cis-1,2-Dichloroethene	47		ug/L	5

U-1S DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/03/99	6 - 11	Xylene (total)	31	NJ	ug/L	5

U-1D DATE	SCREEN (FT)	ANALYTE	CONCENTRATION		UNITS	CLASS GA
11/02/99	9.87 - 19.87	Bis(2-ethylhexyl)phthalate (BEHP)	230		ug/L	5

LEGEND

- GROUND WATER SAMPLE CONCENTRATION GREATER THAN SCREENING LEVELS
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- PIEZOMETER
- PROPERTY BOUNDARY
- TREE LINE
- AREA BOUNDARY LINE

NOTES:
UNITS = mg/Kg
J = ESTIMATED VALUE
N = TENTATIVELY IDENTIFIED

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

SITE WIDE VOCs, SVOCs, AND PCBs IN GROUND WATER

GREATER THAN SCREENING LEVELS

0 250 500
SCALE IN FEET

FILE NO. 4966.21535.135
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS INC.

RACER0060796

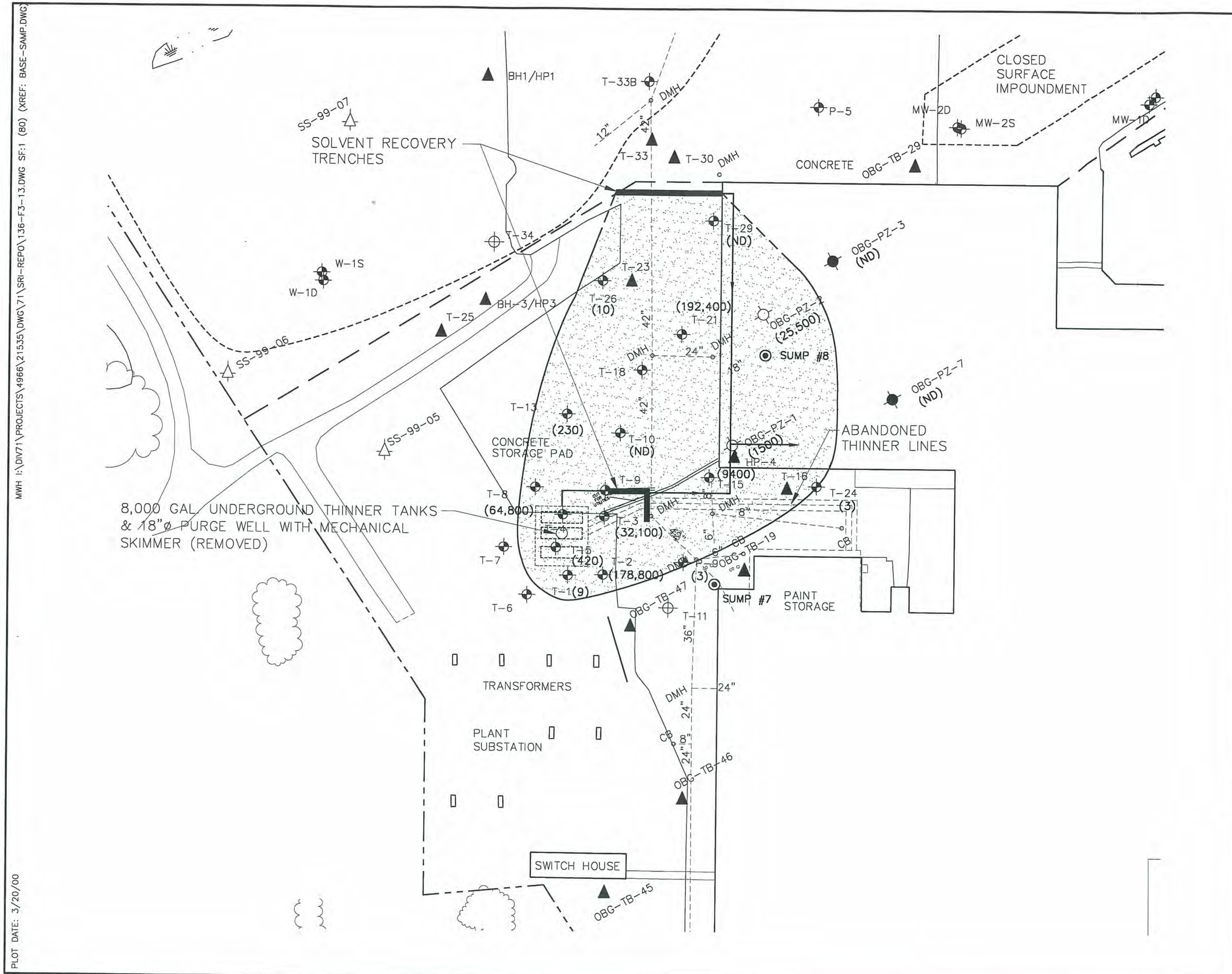


FIGURE 3-13

LEGEND

- PIEZOMETER (ABANDONED)
- PIEZOMETER
- MONITORING WELL
- MONITORING WELL NOT SAMPLED
- SURFACE SOIL SAMPLE
- SOIL BORING
- PROPERTY LINE
- TREE LINE
- SANITARY SEWER
- STORM SEWER
- (10) TOTAL VOC CONCENTRATION ug/L

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

FORMER THINNER TANKS AREA – VOC CONCENTRATIONS IN GROUND WATER (NOV.1999)

0 80 160
SCALE IN FEET

FILE NO. 4966.21535.136
DATE: MARCH 2000

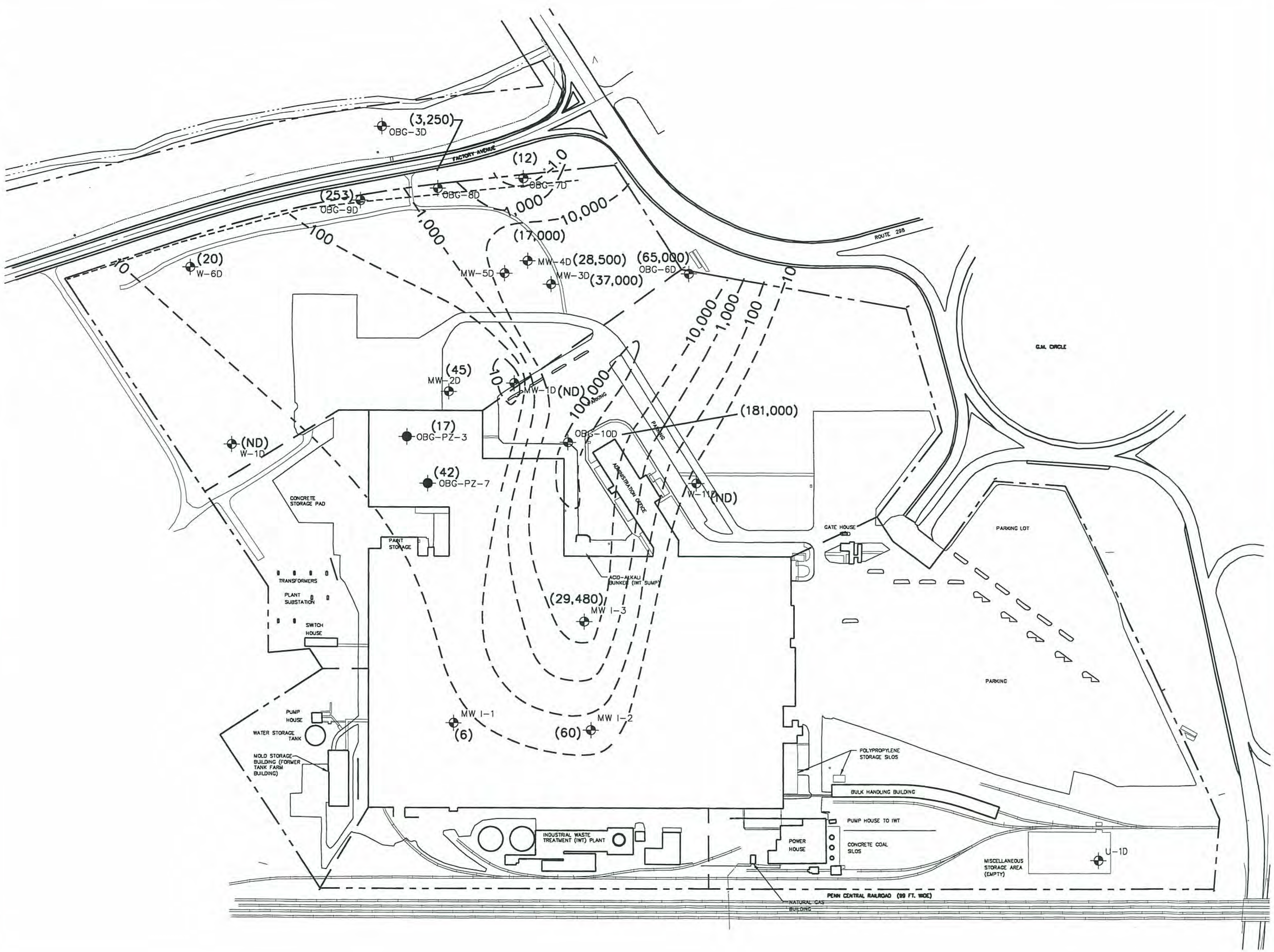
O'BRIEN & GERE ENGINEERS, INC.

RACER0060797

I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\142.DWG SF:1 (250) (XREF: BASE-SAMP.DWG)

PLOT DATE: 4/6/00

FIGURE 3–14



LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY BOUNDARY
- 10 ISO CONCENTRATION LINE
- (45) TOTAL VOC CONCENTRATION (ug/L)

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

DEEP GROUND WATER ISO–CONCENTRATION MAP

0 250 500
SCALE IN FEET

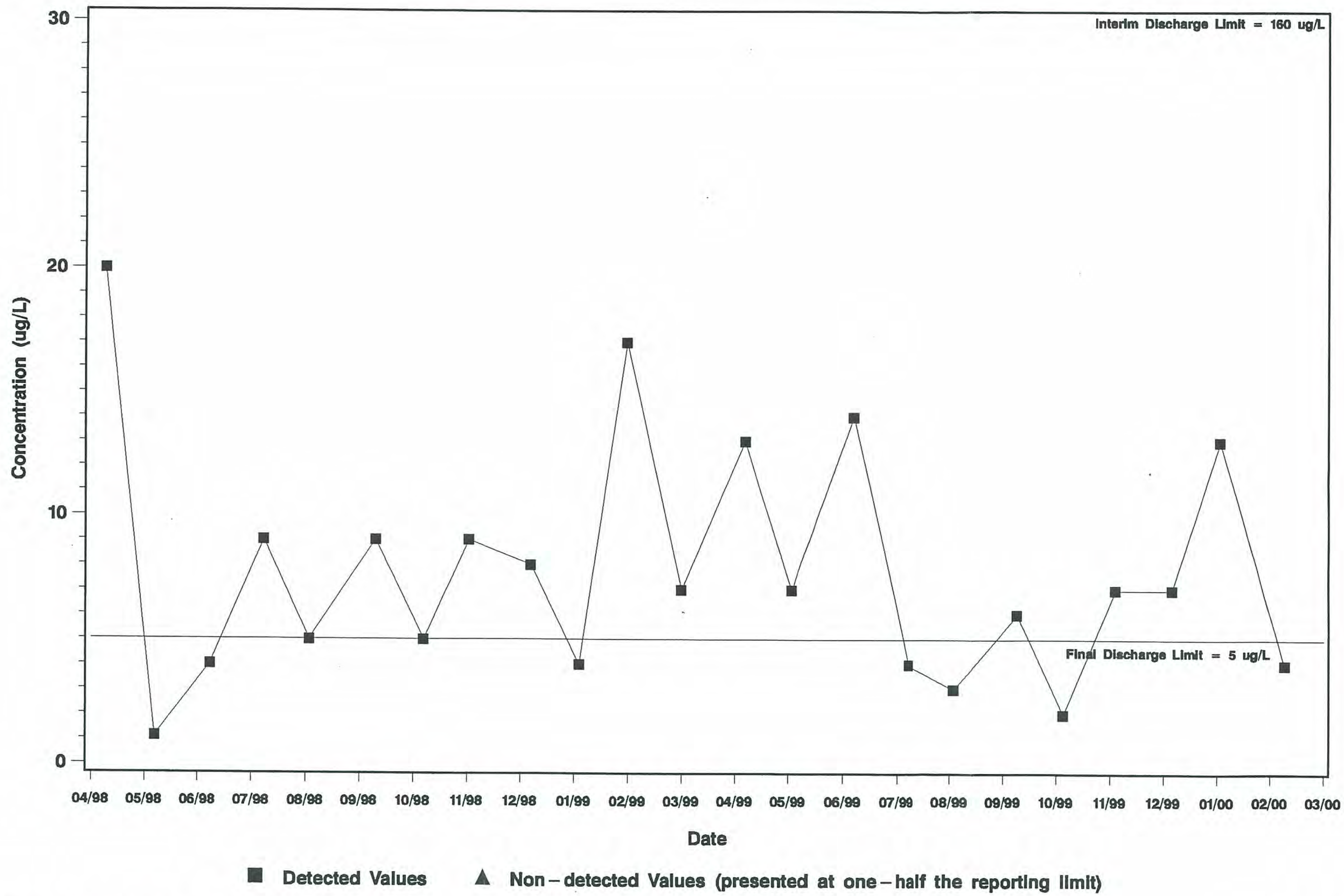
FILE NO. 4966.21535.142
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS INC.

RACER0060798

Figure 3-15

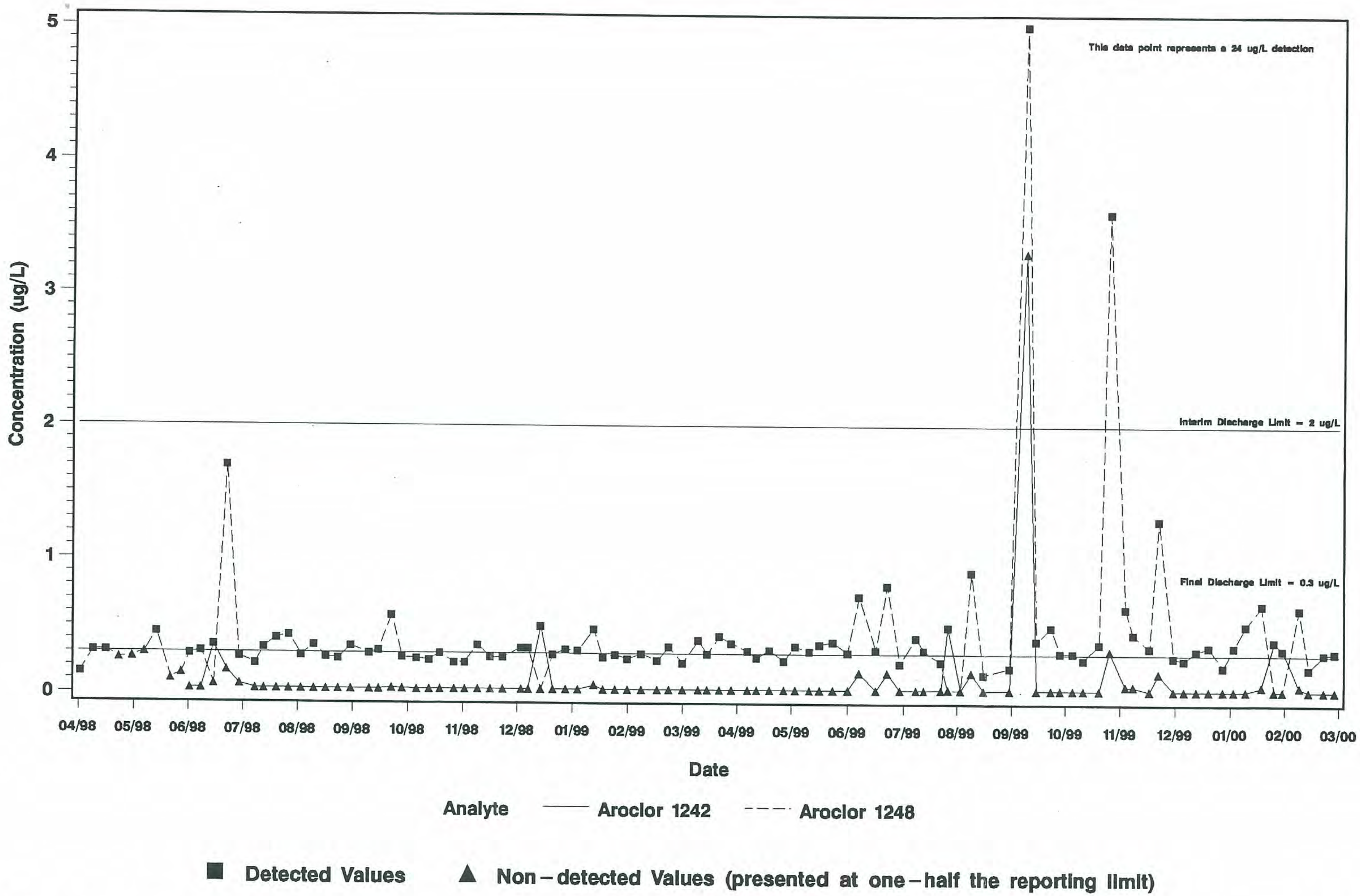
Outfall 003 - Trichloroethene



O Brien & Gere Engineers
n:\3247\21498\SPDES\jrtcepcb.sd2

31-MAR-00

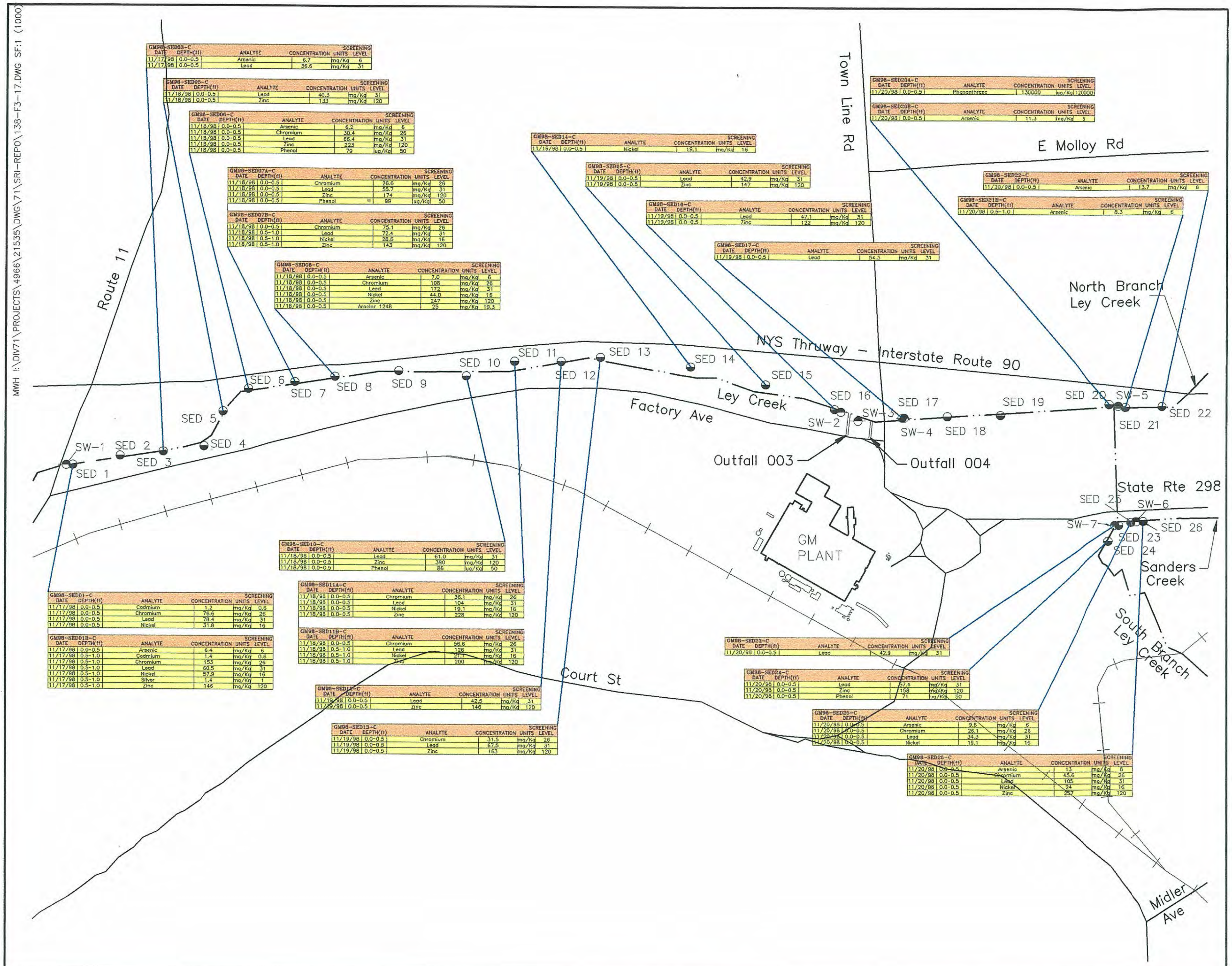
Figure 3–16
Outfall 003 – Aroclor 1242 and Aroclor 1248



O Brien & Gere Engineers
n:\3247\21498\SPDES\JRPCB003.SAS

10-APR-00

MWH I:\DIV71\PROJECTS\4966\21535\DWG\71\SRI-REPO\138-F3-17.DWG SF:1 (1000)



GM98-SED01-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/17/98	0.0-0.5	Cadmium	1.2	mg/Kg	0.6
11/17/98	0.0-0.5	Chromium	76.6	mg/Kg	26
11/17/98	0.0-0.5	Lead	78.4	mg/Kg	31
11/17/98	0.0-0.5	Nickel	31.8	mg/Kg	16

GM98-SED01B-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/17/98	0.0-0.5	Arsenic	6.4	mg/Kg	6
11/17/98	0.5-1.0	Cadmium	1.4	mg/Kg	0.6
11/17/98	0.5-1.0	Chromium	153	mg/Kg	26
11/17/98	0.5-1.0	Lead	60.5	mg/Kg	31
11/17/98	0.5-1.0	Nickel	57.9	mg/Kg	16
11/17/98	0.5-1.0	Silver	1.4	mg/Kg	1
11/17/98	0.5-1.0	Zinc	146	mg/Kg	120

GM98-SED03-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/17/98	0.0-0.5	Arsenic	6.7	mg/Kg	6
11/17/98	0.0-0.5	Lead	36.6	mg/Kg	31

GM98-SED05-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/18/98	0.0-0.5	Lead	40.3	mg/Kg	31
11/18/98	0.0-0.5	Zinc	133	mg/Kg	120

GM98-SED06-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/18/98	0.0-0.5	Arsenic	6.2	mg/Kg	6
11/18/98	0.0-0.5	Chromium	30.4	mg/Kg	26
11/18/98	0.0-0.5	Lead	66.4	mg/Kg	31
11/18/98	0.0-0.5	Zinc	223	mg/Kg	120
11/18/98	0.0-0.5	Phenol	79	ug/Kg	50

GM98-SED07A-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/18/98	0.0-0.5	Chromium	26.6	mg/Kg	26
11/18/98	0.0-0.5	Lead	55.7	mg/Kg	31
11/18/98	0.0-0.5	Zinc	174	mg/Kg	120
11/18/98	0.0-0.5	Phenol	99	ug/Kg	50

GM98-SED07B-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/18/98	0.0-0.5	Chromium	75.1	mg/Kg	26
11/18/98	0.5-1.0	Lead	72.4	mg/Kg	31
11/18/98	0.5-1.0	Nickel	28.6	mg/Kg	16
11/18/98	0.5-1.0	Zinc	143	mg/Kg	120

GM98-SED08-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/18/98	0.0-0.5	Arsenic	7.0	mg/Kg	6
11/18/98	0.0-0.5	Chromium	108	mg/Kg	26
11/18/98	0.0-0.5	Lead	172	mg/Kg	31
11/18/98	0.0-0.5	Nickel	44.0	mg/Kg	16
11/18/98	0.0-0.5	Zinc	247	mg/Kg	120
11/18/98	0.0-0.5	Aroclor 1248	25	mg/Kg	19.3

GM98-SED10-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/18/98	0.0-0.5	Lead	61.0	mg/Kg	31
11/18/98	0.0-0.5	Zinc	390	mg/Kg	120
11/18/98	0.0-0.5	Phenol	86	ug/Kg	50

GM98-SED11A-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/18/98	0.0-0.5	Chromium	36.1	mg/Kg	26
11/18/98	0.0-0.5	Lead	104	mg/Kg	31
11/18/98	0.0-0.5	Nickel	19.1	mg/Kg	16
11/18/98	0.0-0.5	Zinc	228	mg/Kg	120

GM98-SED11B-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/18/98	0.0-0.5	Chromium	56.6	mg/Kg	26
11/18/98	0.5-1.0	Lead	126	mg/Kg	31
11/18/98	0.5-1.0	Nickel	21.7	mg/Kg	16
11/18/98	0.5-1.0	Zinc	200	mg/Kg	120

GM98-SED12-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/19/98	0.0-0.5	Lead	42.5	mg/Kg	31
11/19/98	0.0-0.5	Zinc	146	mg/Kg	120

GM98-SED13-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/19/98	0.0-0.5	Chromium	31.5	mg/Kg	26
11/19/98	0.0-0.5	Lead	67.5	mg/Kg	31
11/19/98	0.0-0.5	Zinc	163	mg/Kg	120

GM98-SED14-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/19/98	0.0-0.5	Nickel	19.1	mg/Kg	16

GM98-SED15-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/19/98	0.0-0.5	Lead	42.9	mg/Kg	31
11/19/98	0.0-0.5	Zinc	147	mg/Kg	120

GM98-SED16-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/19/98	0.0-0.5	Lead	47.1	mg/Kg	31
11/19/98	0.0-0.5	Zinc	122	mg/Kg	120

GM98-SED17-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/19/98	0.0-0.5	Lead	54.3	mg/Kg	31

GM98-SED20A-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/20/98	0.0-0.5	Phenanthrene	130000	ug/Kg	120000

GM98-SED20B-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/20/98	0.0-0.5	Arsenic	11.3	mg/Kg	6

GM98-SED22-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/20/98	0.0-0.5	Arsenic	13.7	mg/Kg	6

GM98-SED21B-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/20/98	0.5-1.0	Arsenic	8.3	mg/Kg	6

GM98-SED23-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/20/98	0.0-0.5	Lead	42.9	mg/Kg	31

GM98-SED24-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/20/98	0.0-0.5	Lead	57.4	mg/Kg	31
11/20/98	0.0-0.5	Zinc	158	mg/Kg	120
11/20/98	0.0-0.5	Phenol	71	ug/Kg	50

GM98-SED25-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/20/98	0.0-0.5	Arsenic	9.6	mg/Kg	6
11/20/98	0.0-0.5	Chromium	26.1	mg/Kg	26
11/20/98	0.0-0.5	Lead	34.3	mg/Kg	31
11/20/98	0.0-0.5	Nickel	19.1	mg/Kg	16

GM98-SED26-C					
DATE	DEPTH(ft)	ANALYTE	CONCENTRATION	UNITS	SCREENING LEVEL
11/20/98	0.0-0.5	Arsenic	13	mg/Kg	6
11/20/98	0.0-0.5	Chromium	45.6	mg/Kg	26
11/20/98	0.0-0.5	Lead	105	mg/Kg	31
11/20/98	0.0-0.5	Nickel	24	mg/Kg	16
11/20/98	0.0-0.5	Zinc	257	mg/Kg	120

FIGURE 3-17

LEGEND

- SEDIMENT CORE SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

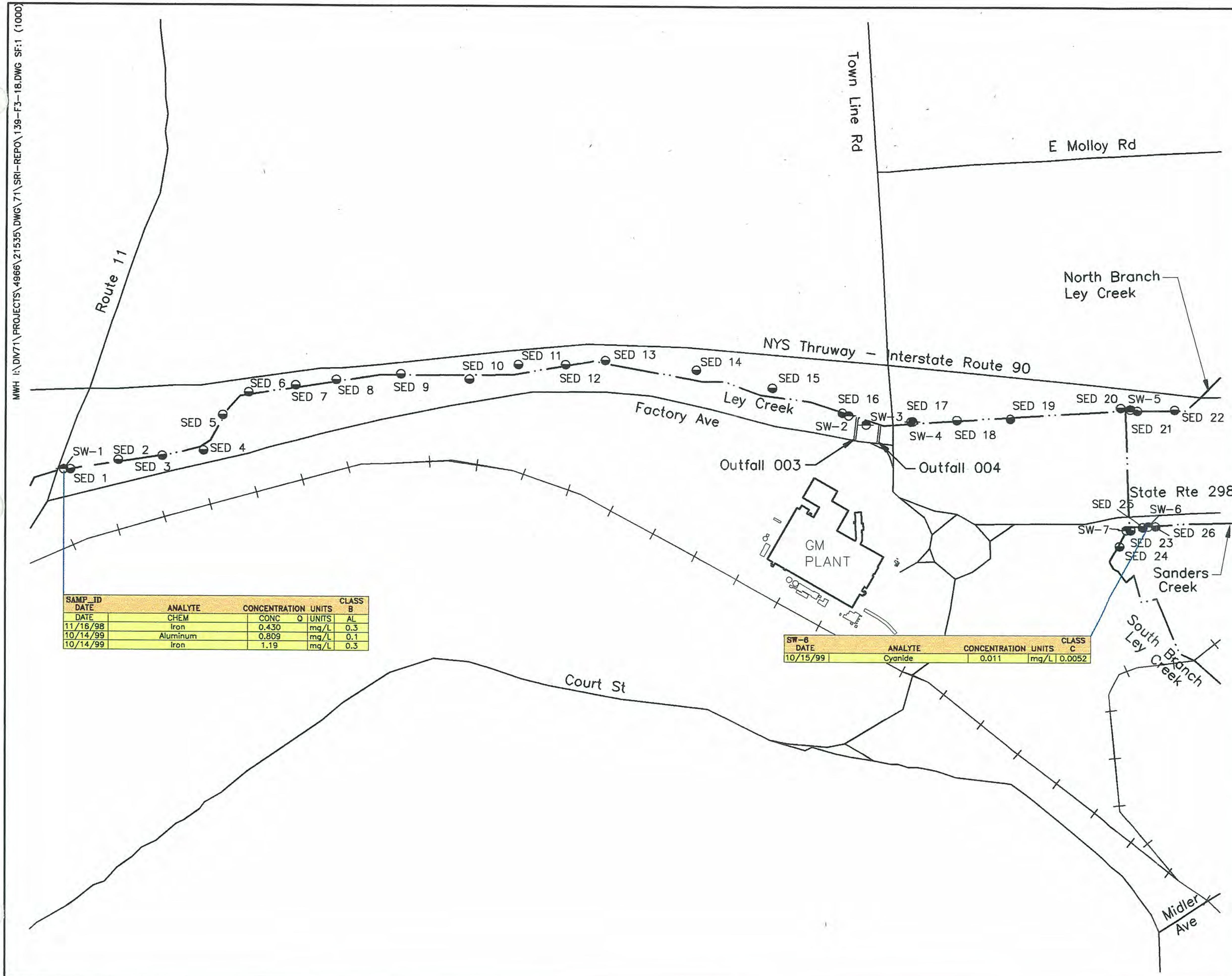
1998/1999 LEY CREEK CONCENTRATIONS IN SEDIMENT GREATER THAN SCREENING LEVELS

0 1000 2000
SCALE IN FEET

FILE NO. 4966.21535.138
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

RACER0060801



SAMP_ID DATE	ANALYTE	CONCENTRATION		UNITS	CLASS B
DATE	CHEM	CONC	Q	UNITS	AL
11/16/98	Iron	0.430		mg/L	0.3
10/14/99	Aluminum	0.809		mg/L	0.1
10/14/99	Iron	1.19		mg/L	0.3

SW-6 DATE	ANALYTE	CONCENTRATION	UNITS	CLASS C
10/15/99	Cyanide	0.011	mg/L	0.0052

FIGURE 3-18

LEGEND

- SEDIMENT CORE SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

1998/1999 LEY CREEK CONCENTRATIONS IN SURFACE WATER GREATER THAN SCREENING LEVELS

0 1000 2000
SCALE IN FEET

FILE NO. 4966.21535.139
DATE: APRIL 2000

O'BRIEN & GERE ENGINEERS, INC.

Solid waste management unit (SWMU) and Area of Concern (AOC) Status

Solid Waste Management Unit (SWMU) and Area of Concern (AOC) Status

Unit Number	NYSDEC Unit Name (listed in draft Part 373 permit)	Status
RCRA or NYSDEC regulated units		
1	Lagoon (NYSDEC)	Surface impoundment No. 1 was closed in 1989 in accordance with a RCRA closure plan. Impacted sediment was removed/disposed. Backfill included PCB-containing (< 40 mg/kg) soil from Meadowbrook/Hookway site. Cover consisted of clay, soil, and vegetation.
2	Holding Pond (NYSDEC)	Surface impoundment No. 2 was closed in 1989 in accordance with a RCRA closure plan. Impacted sediment was removed/disposed, and impoundment was backfilled with clean soil, regraded, and covered with soil and vegetation. The potential presence of solvent DNAPL in this area was investigated as part of the Supplemental RI.
3	Drum Storage Area No. 1 (RCRA)	Closure plan proposed to NYSDEC and never finalized because of its planned inclusion in a multi-media site-wide program. Surface and subsurface soil sampling was conducted in this area (southwest property area) as part of the Supplemental RI.
4	Drum Storage Area No. 2 (RCRA)	Out of service. Surface and subsurface soil sampling was conducted in this area (IWTP area; TCE storage area) as part of the Supplemental RI.
5	Hazardous Waste Accumulation Area (RCRA)	Currently operated as temporary (less than 90 days) hazardous waste storage area.
6	Kolene Unit (RCRA)	Kolene unit dismantled in 1988 and removed from facility. The kolene unit was aboveground and not expected to have been a source of subsurface contamination.

Solid Waste Management Unit (SWMU) and Area of Concern (AOC) Status

Unit Number	NYSDEC Unit Name (listed in draft Part 373 permit)	Status
		Powerhouse Units
7	Powerhouse Wastewater Sump	Item to be addressed during the facility cleaning program. The following activities will be conducted: the sump will be inspected; residuals will be removed; and the sump will be decontaminated.
8	Ash Silo	Out of service. The ash silo is an aboveground structure and is not likely a source of subsurface contamination. Item to be addressed during the facility cleaning program. The following activities will be conducted: the silo will be inspected; residuals will be removed; and the silo will be decontaminated.
9	Ash Scrubber (tumbler)	Out of service. The ash scrubber is an aboveground structure and not expected to have been a source of subsurface contamination. Item to be addressed with the ash silo during the facility cleaning program. The following activities will be conducted: the scrubber will be inspected; residuals will be removed; and the scrubber will be decontaminated.
10	Ash Baghouse	Item is unknown to GM.
11	Ash Pit	Item is unknown to GM.
12	Coal Elevator Sump	Out of service. Item cleaned during 1996 facility decommissioning activities.

Unit Number	NYSDEC Unit Name (listed in draft Part 373 permit)	Status
		Oil Reclamation System
13	Underground Oil Reclamation Sumps	Out of service. As part of a 1981 NYSDEC Consent Order, the underground oil reclamation sumps were cleaned, coated with an epoxy material and filled with pourable concrete (closed in place) in approximately 1985. Subsurface soil samples were collected in the fill material surrounding each oil reclamation sump in 1995-1996 as part of the Phase II ESA, as documented in the October 1997 Preliminary RI/FS Report. Extent of associated oil migration along abandoned storm sewer lines leading to oil/water collection sumps was investigated during Supplemental RI. Underground oil reclamation sumps will also be investigated as part of the proposed work plan for the sewer cleaning and televising program that has been submitted to NYSDEC. GM is currently awaiting approval to proceed.
14	Underground Oil Storage Tanks (five)	Tanks removed. Subsurface soil samples were collected in the fill material surrounding each oil tank in 1995-1996 as part of the Phase II ESA, as documented in the October 1997 Preliminary RI/FS Report.
15	Portable Pumping Units (five)	Mobile units no longer exist. The mobile units were aboveground and are not expected to have been a source of subsurface contamination.
16	Dirty Oil Transfer Station	Out of service. The Dirty Oil Transfer Station was an aboveground unit and was not likely a source of subsurface contamination. The dirty oil transfer station was addressed during the facility cleaning program. Residuals from this area were removed and PCB surface decontamination procedures were employed to obtain a PCB concentration of less than 10 ug/100 cm^2.
17	Oil Reclaim Sump 518 Molder	Out of service. As part of a 1981 NYSDEC Consent Order, the oil reclaim sump was cleaned, coated with an epoxy material and filled with pourable concrete (closed in place) in approximately 1985. Subsurface soil samples were collected in the fill material surrounding the oil reclamation sump in 1995-1996 as part of the Phase II ESA, as documented in the October 1997 Preliminary RI/FS Report. The molder associated with Sump 518 was aboveground and was not connected to subsurface materials.

Unit Number	NYSDEC Unit Name (listed in draft Part 373 permit)	Status
18	Oil Reclaim Sump 701 Molder	Out of service. As part of the 1981 NYSDEC Consent Order, the oil reclaim sump was cleaned, coated with an epoxy material and filled with pourable concrete (closed in place) in approximately 1985. Subsurface soil samples were collected in the fill material surrounding each oil reclamation sump in 1995-1996 as part of the Phase II ESA, as documented in the October 1997 Preliminary RI/FS Report. The molder associated with Sump 701 was aboveground and was not connected to subsurface materials.
19	Oil Collection Trenches	Out of service. The majority of oil collection trenches that surrounded the injection molders were filled with concrete as part of the 1994 manufacturing operations shutdown. The oil collection trenches were shallow (approximately 6 in deep), cut or formed into the reinforced concrete slab, and are not expected to have been a source of subsurface contamination. The remaining trenches that were not filled were addressed during the facility cleaning program. The following activities were conducted: the trenches were inspected; residuals were removed; and the trenches were decontaminated.
20	Oil Collection Pans	Removed in 1992 and 1993 after ceasing of manufacturing operations. The oil collection pans were aboveground and are not expected to have been in contact with subsurface materials.
21	Dirty Oil Tanks (two)	The Dirty Oil Tanks (5,000 gal) were part of injection molder hydraulic oil reclamation and recycling processes. These tanks are aboveground and are not expected to have been a source of subsurface contamination. Item to be addressed during the facility cleaning program. The following activities will be conducted: the tanks will be inspected; residuals will be removed; the tanks will be decontaminated and removed.
22	Industrial Waste Treatment Plant Sump	Item unknown to GM. Potentially could be active sumps (Unit Nos. 61 and 62) which collect water from tank containment area.

Solid Waste Management Unit (SWMU) and Area of Concern (AOC) Status

Unit Number	NYSDEC Unit Name (listed in draft Part 373 permit)	Status
23	Primary Dirty Oil Filter	The primary Dirty Oil Filter, Vacuum Distillation Units, and secondary Dirty Oil Filter were part of the injection molder hydraulic oil reclamation and recycling process. These units are aboveground and are not expected to have been a source of subsurface contamination. Items addressed during the facility cleaning program. The following activities were conducted: the units were inspected; residuals were removed; and the units were decontaminated and removed.
24	Vacuum Distillation Units (two)	
25	Secondary Dirty Oil Filter	
26	Dirty Oil Holding Tanks (two)	Items unknown to GM.
27	Kidney Filters (two)	Unit part of injection molder hydraulic oil reclamation and recycling process. These filters are aboveground units and are not expected to have been a source of subsurface contamination. Item addressed during the facility cleaning program. The following activities were conducted: the filters were inspected; residuals were removed; and the filters were decontaminated and removed.
28	Interceptor Trenches (two)	Currently in service to collect ground water as part of 1986 thinner consent order program. The interceptor trenches will be left in place until the final site remedy is implemented.
29	Contaminated Ground Water Tank	Currently in service to collect ground water as part of 1986 thinner consent order program.
30	Interceptor Sumps	Currently in service to collect oil/water from beneath manufacturing building and pump to the Industrial Waste Treatment (IWT) plant for treatment.
31	Paint Room Sump	Out of service. Paint room sump to be investigated during Supplemental RI. Item to be addressed during the facility cleaning program. The following activities will be conducted: the sump will be inspected; residuals will be removed; and the sump will be decontaminated and filled with inert material.

Solid Waste Management Unit (SWMU) and Area of Concern (AOC) Status

Unit Number	NYSDEC Unit Name (listed in draft Part 373 permit)	Status
32	Clarifier	Active part of IWT plant used for temporary storage of wastewater. The clarifier tank is aboveground and is not expected to have been a source of subsurface contamination.
33	Inactive Clarifier	Reserve clarifier is an active part of IWT plant. The clarifier tank is aboveground and is not expected to have been a source of subsurface contamination.
34	Sludge Sump	Active part of IWT plant.
35	Inactive Sludge Sump	Reserve sludge pump. Active part of IWT plant.
36	Sludge Thickener Tank	Active part of IWT plant. The tank is aboveground and is not expected to have been a source of subsurface contamination.
37	Inactive Sludge Thickener Tank	Reserve sludge thickener tank. Active part of IWT plant. The tank is aboveground and is not expected to have been a source of subsurface contamination.
38	Sludge Holding Tank	Primary paint sludge tank out of service. The tank is aboveground and is not likely a source of subsurface contamination.
39	Filter Press	The filter press was cleaned, tested, and removed in June 1998. The filter press was aboveground and is not expected to have been a source of subsurface contamination.
40	Holding Tanks (three)	Active part of IWT plant (final effluent holding tanks). The tanks are aboveground and are not expected to have been a source of subsurface contamination.
41	Industrial Waste Sump	Also referred to as acid/alkali bunker. Active sump located in front (north) of manufacturing building which collects water from oil/water collection sumps 1, 2, 4, and 5 and pumps to main equalization tank.

Unit Number	NYSDEC Unit Name (listed in draft Part 373 permit)	Status
42	Emergency Overflow Sump	Active part of IWT plant (related to gas engine).
43	Deionized Water Sump	Active part of IWT plant.
44	Equalization Tank 1	Active part of IWT plant. The tank is aboveground and is not expected to have been a source of subsurface contamination.
45	Equalization Tank 2	Active part of IWT plant. The tank is aboveground and is not expected to have been a source of subsurface contamination.
46	Equalization Tank 3	Active part of IWT plant. The tank is aboveground and is not expected to have been a source of subsurface contamination.
47	Coalescing Plate Separators (two)	Active part of IWT plant (oil/water treatment process). The tanks are aboveground and are not expected to have been a source of subsurface contamination.
48	Batch Tanks No. 1 and No. 2	
49	Flotation/Sedimentation Tank	
50	Wet Well	
51	Carbon Filtration Units (four)	Active part of IWT plant (oil/water treatment process). The units are aboveground and are not expected to have been a source of subsurface contamination.

Solid Waste Management Unit (SWMU) and Area of Concern (AOC) Status

Unit Number	NYSDEC Unit Name (listed in draft Part 373 permit)	Status
52	2,000-Gallon Waste Oil Tank	Out of service. Item to be addressed during the facility cleaning program. The tank is aboveground and is not expected to have been a source of subsurface contamination. The following activities will be conducted: the tank will be inspected; residuals will be removed; the tank will be decontaminated and removed.
53	5,000-Gallon Waste Oil Tank	Out of service. The tank is aboveground and is not expected to have been a source of subsurface contamination. Item to be addressed during the facility cleaning program. The following activities will be conducted: the tank will be inspected; residuals will be removed; the tank will be decontaminated removed.
54	Waste Oil Bunkers (two)	Out of service. Item to be addressed during the facility cleaning program. The following activities will be conducted: the bunkers will be inspected and decontaminated.
55	Inactive Waste Oil Bunkers (four)	Out of service. Item to be addressed with active portions of IWTP, if decommissioned.
56	Former Cyanide Tank No. 1	The Former Cyanide Tank No. 1 is now referred to as the Flotation/Sedimentation/Wet Well Tank. The tank is aboveground and is not expected to have been a source of subsurface contamination.
57	Former Sludge Holding Tanks (two)	Units dismantled and removed from facility. These units were aboveground and are not expected to have been a source of subsurface contamination.
58	Vacuum Filters (two)	
59	Sludge Conveyor	
60	Corrugated Plate Interceptor Unit	

Solid Waste Management Unit (SWMU) and Area of Concern (AOC) Status

Unit Number	NYSDEC Unit Name (listed in draft Part 373 permit)	Status
61	SO_2 Scrubbers	The SO_2 Scrubbers were an aboveground unit that were removed from the site. Subsurface soil samples were collected in the vicinity of the SO_2 Scrubbers during the 1995-1996 Phase II ESA.
62	Acid Alkali Tanks (three)	Currently utilized for equalization overflow at IWTP. The tanks are aboveground and are not expected to have been a source of subsurface contamination.
63	Sludge Dumpster	Active part of IWT plant (oil/water treatment process). The dumpster is aboveground and is not expected to have been a source of subsurface contamination.
64	Filter Press Sump	Out of service. Item to be addressed with active portions of IWTP, if decommissioned.
		Miscellaneous Units
65	Hoffman Filter Unit	Out of service. The filter unit was aboveground and was not expected to have been a source of subsurface contamination. Item was addressed during the facility cleaning program. The Hoffman Filter was inspected, decontaminated, dismantled, and scraped during the facility cleaning program.
66	Old Storm Sewer System for Outfall 1	Outfall 001 out of service. During the Supplemental RI, soil and ground water in the northern property area was investigated.
67	New Storm Sewer System for Outfall 3	In service to collect storm runoff from plant roof and grounds, and receive IWT plant treated effluent for discharge through Outfall 003. This sewer system will remain in place to convey storm water from the site. Outfall 003 will continue to be monitored under the NYSDEC SPDES permit. A proposed work plan for a sewer cleaning and televising program has been submitted to NYSDEC. We are currently awaiting approval to proceed.
68	Old Contaminated Rubbish Containers	Item unknown to GM.

Solid Waste Management Unit (SWMU) and Area of Concern (AOC) Status

Unit Number	NYSDEC Unit Name (listed in draft Part 373 permit)	Status
69	Past Landfill	Subsurface soil, fill, and ground water sampled as part of 1995-1996 Phase II ESA, as documented in the October 1997 Preliminary RI/FS report. Landfill materials and ground water in the vicinity was investigated during the Supplemental RI.
70	Flammable Storage Room Waste Accumulation Area	Presently IWT plant garage.
71	Emulsifier Bunkers (two)	Item unknown to GM. However, emulsion tanks in the IWT plant basement will be inspected, decontaminated and removed during the facility cleaning program.
72	Incinerator	Unit dismantled and removed from facility. The incinerator is an aboveground unit that is not expected to have been a source of subsurface soil contamination. Subsurface soil sampling activities were conducted in the vicinity of the incinerator during the 1995-1996 Phase II ESA. Surface soil in this area was investigated during the Supplemental RI.
73	Process Sewers Handling Hazardous Constituents	Out of service. However, ground water is potentially infiltrating the process sewers leading to the acid/alkali sump. Based on visual observations of the acid/alkali sump, there was no free product. Thus, additional investigation of the process sewers was not proposed for the Supplemental RI.
74	Storm Sewers System for Outfall 4	In service to collect storm runoff from upstream off-site areas and plant parking lots (leading to Outfall 004). This storm sewer system will remain in place to convey storm water from the site as well as areas south of the site. Outfall 004 will continue to be monitored under the NYSDEC SPDES permit.

Solid Waste Management Unit (SWMU) and Area of Concern (AOC) Status

AOC Number	AOC Name (listed in draft Part 373 permit)	Status
A	Thinner Tanks/Xylene Spill	Tanks removed in 1986 under SPDES consent order; soil and ground water in this area investigated during 1985 Phase II Hydrogeologic Investigation; thinner area ground water collection and treatment system in service. Routine quarterly ground water monitoring conducted in this area.
B	Oil Stains Near the Industrial Waste Sump	As part of the 1981 NYSDEC Consent Order, preventive measures were implemented to minimize overflow from industrial waste sump. These measures include a secondary containment bunker and sump. Subsurface soil samples collected in vicinity of oil stains near the industrial waste sump during the 1995-1996 Phase II ESA. Surface soil sampling and downgradient ground water sampling in this area was included in Supplemental RI.
C	Oil Stains Near the Wet Well	Surface soil sampling in unpaved areas surrounding the IWT Plant was conducted during the Supplemental RI.
D	PCB Contamination Near Northern Fence Line - Off-Site	Onondaga County surface soil analytical data is available for this area. Some impacted soils removed during 1991 Interim Remedial Measure (IRM) program. This area will be addressed during the Supplemental FS.
E	PCB Contamination Near Northern Fence Line - On-Site	Various northern property area soil sampling activities/data presented in October 1997 Preliminary RI/FS Report. Additional soil/ground water sampling was conducted as part of Supplemental RI.
F	PCB and Xylene Spill Area Under Plant Building	Investigation of the xylene spill under the main plant building is not proposed as discussed in Section 4 of the Work Plan. The potential for PCB NAPL under the main plan building was investigated during the Supplemental RI.
G	Ley Creek Sediments - Off-Site	Ley Creek dredged sediment evaluated as part of Ley Creek PCB Dredgings site RI/FS and NYSDEC March 1997 ROD. Ley Creek sediment evaluated as part of Ley Creek PCB Dredgings site RI/FS, and deferred by NYSDEC to this RI/FS. The Ley Creek sediment was investigated during the Supplemental RI.

Solid Waste Management Unit (SWMU) and Area of Concern (AOC) Status

AOC Number	AOC Name (listed in draft Part 373 permit)	Status
H	Former Extension of Impoundment 1 Under Building	Plant records do not indicate whether sediment from the portion of Impoundment No. 1 covered by the 1975 building addition was removed. This area was investigated during the Supplemental RI.

APPENDIX B

1999 Ground water sampling field logs

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	11/ 1/ /99	Personnel	KurB, ArB, CPO	Weather	Sunny 35°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T-1
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 10.17 ft.
Depth to Water * 8.71 ft.
Length of Water Column 1.36 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(1230)	8.71							100
5	9.19	13.23	7.09	0.977	6.0	2.96	57.0	100
10 *	9.70	DRY →						100
15								
0905-11/12	8.84	8.26	7.04	0.959	-56	7.35	65.6	100

Water sample:
Time collected: 0910 -11/12/99

Total volume of purged water removed: 400 mL

Physical appearance at start
Color Cloudy
Odor NO
Sheen/Free Product NO

Physical appearance at sampling
Color Cloudy
Odor NO
Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ML	VOA-VIAL	3	NO	NO	~7

Notes: * Well [illegible]

RACER0060817

O'Brien & Gere Engineers, Inc.			**Low Flow Ground Water Sampling Log**		
Date	11/ 1 /99	Personnel	[illegible]	Weather	Sunny, 35°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T-2
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 9.40 ft.

Depth to Water * 7.36 ft.

Length of Water Column 2.04 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water outer casing	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1055)	7.36							240
5	7.36	13.78	6.89	0.847	-73	1.77	30.3	240
10	7.36	13.98	6.90	0.846	-81	1.20	26.6	240
15	7.36	14.11	7.01	0.838	-95	0.91	21.9	240
20	7.36	14.20	7.03	0.823	-102	0.75	17.2	240
25	7.36	14.33	7.08	0.768	-106	0.72	10.4	240
30	7.36	14.42	7.10	0.742	-109	0.69	10.4	240
35	7.36	14.46	7.11	0.744	-110	0.66	8.6	240
40	7.36	14.46	7.12	0.729	-111	0.64	6.4	240
45	7.36	14.47	7.13	0.713	-113	0.59	4.6	240
50	7.36	14.50	7.13	0.706	-113	0.58	4.5	240

Water sample:

Time collected: 1145

Total volume of purged water removed: ~12800 ml

Physical appearance at start		Physical appearance at sampling	
Color	clear	Color	clear
Odor	petroleum	Odor	petroleum
Sheen/Free Product	no	Sheen/Free Product	no

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA - Vial	3	no	none	~7.0

Notes: MS / MSD collected

RACER0060818

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date	11/ 11 /99	Personnel	KWS, PGB, CPO	Weather	Sunny 30°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T-3
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 8.59 ft.

Depth to Water * 5.64 ft.

Length of Water Column ______ ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (0940)	5.84							130
5	6.15	11.21	6.62	1.16	-27	2.92	9.4	130
10	6.31	11.93	6.73	1.17	-38	2.00	8.6	130
15	6.45	12.60	6.80	1.17	-48	1.63	7.6	130
20	6.63	12.91	6.86	1.17	-53	1.47	7.3	130
25	6.81	13.14	6.89	1.18	-57	1.30	7.5	130
30	7.03	13.38	6.88	1.18	-65	1.29	6.3	130
35	7.25	13.50	6.90	1.19	-73	1.77	5.3	130
40	7.46	13.71	6.89	1.20	-79	1.30	4.9	130
45	7.76	13.82	6.85	1.20	-82	1.19	4.9	130
50*								
1520	6.90	11.62	6.74	0.11	-30	10.6	33.2	100

Water sample:

Time collected: 1520

Total volume of purged water removed: ~1400 mL

Physical appearance at start
Color clear
Odor no
Sheen/Free Product no

Physical appearance at sampling
Color Colorless
Odor no
Sheen/Free Product no

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA-Vial	3	no	none	~7.0

Notes: * Well purged dry

RACER0060819

jam:ers/div76/admin/4_notes/micrlog3

April 25, 1997

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	11/11/99	Personnel	PGD/KB/CPO	Weather	~40 sunny
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T-4
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 8.40 ft.
Depth to Water * 6.54 ft.
Length of Water Column 1.86 ft.

* Measurements taken from
- X Top of Well Casing
- Top of Protective Casing
- (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	S/M Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (10:20)	6.54							
5	6.86	Chamber filling						~100
10	7.07	13.05	6.38	0.13	-64	2.3	22.4	100
15	7.36	13.88	6.40	0.13	-75	1.1	21.5	100
20	7.55	14.11	6.39	0.13	-80	1.1	21.6	170
25	8.04	14.61	6.39	0.13	-85	1.1	18.1	170
28	Dry.							
11/12/99 0940	7.45	10.74	6.37	1.16 mS/cm	-43	3.11	83.1	100

Water sample:

Time collected: 0950 - 11/12/99

Total volume of purged water removed: ~750 mL

Physical appearance at start
Color: Slightly Cloudy
Odor: ~~None~~ Paint thinner smell.
Sheen/Free Product: —

Physical appearance at sampling
Color: Cloudy
Odor: Yes
Sheen/Free Product: No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	No	None	~7.0

Notes: Pumped dry @ 28 minutes into pumping

RACER0060820

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date 11/11 /99
Personnel PGB/KB
Weather ~40 sunny
Site Name GM - Former IFG Facility
Evacuation Method peristaltic pump
Well # T-5
Site Location Syracuse, NY
Sampling Method peristaltic pump
Project # 21535

Well information:

Depth of Well * 10.10 ft.
Depth to Water * 8.96 ft.
Length of Water Column 1.14 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	S/m Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
								~150
0 10:55	8.96							~150
5	9.35	Filling	Chamber.					~150
10	9.44	14.51	6.43	.13	-43	2.6	40.5	75
15	9.50	14.32	6.43	.13	-46	1.8	31.5	75
20	9.55	14.16	6.46	.13	-59	1.7	21.8	75
25	9.65	14.18	6.47	.13	-66	1.7	16.6	120
28	Dry.							
12:40	Sample 9.35							

Water sample:

Time collected: 12:40
Total volume of purged water removed: ~800 ML

Physical appearance at start
Color Clear
Odor Paint thinner
Sheen/Free Product none.

Physical appearance at sampling
Color Clear
Odor Paint thinner
Sheen/Free Product —

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ML	VOA-VIAL	3	NO	None	~7.0

Notes:

RACER0060821

April 25,

iam:ers/div76/admin/4_notes/micrlog3

O'Brien & Gere Engineers, Inc. **Low Flow Ground Water Sampling Log**

Date 11/ 10 /99 Personnel KWB, PGB, LPO Weather Cloudy 50°
Site Name GM - Former IFG Facility Evacuation Method peristaltic pump Well # T-10
Site Location Syracuse, NY Sampling Method peristaltic pump Project # 21535

Well information:

Depth of Well * 7.70 ft.
Depth to Water * 3.10 ft.
Length of Water Column 4.60 ft.

* Measurements taken from
X Top of Well Casing
Top of Protective Casing
(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1440)	3.10							
5	3.61	15.37	6.91	1.04	-2	1.00	36.8	100
10	3.95	15.32	6.90	1.04	-23	0.78	30.6	100
15	4.47	15.32	6.87	1.04	-47	0.65	17.9	200
20	4.88	15.38	6.84	1.05	-44	0.60	12.7	100
25	5.04	15.35	6.84	1.05	-44	0.74	9.0	100
30	5.29	15.49	6.85	1.05	-53	0.76	7.5	100
35	5.82	15.66	6.83	1.05	-65	0.52	5.0	300
40 *	6.30							
11/12 (0940)	5.73	11.03	6.74	0.877	55	7.51	19.3	100

Water sample:

Time collected: 0945-11/12/99 Total volume of purged water removed: ~1200 mL

Physical appearance at start
Color Colorless
Odor None
Sheen/Free Product NO

Physical appearance at sampling
Color Colorless
Odor None
Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	NO	None	~7.0

Notes: * Well pumped dry

RACER0060822

O'Brien & Gere Engineers, Inc.
Low Flow Ground Water Sampling Log

Date 11/ 10 /99
Personnel Kurt, PG, B
Weather Rain 50°
Site Name GM - Former IFG Facility
Evacuation Method peristaltic pump
Well # T-13
Site Location Syracuse, NY
Sampling Method peristaltic pump
Project # 21535

Well information:

Depth of Well * 7.70 ft.
Depth to Water * 4.13 ft.
Length of Water Column 3.57 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(1550)	4.13							
5	4.93	16.46	6.64	0.93	-82	1.07	186.0	100
10	5.25	16.48	6.69	0.93	-83	1.52	186.0	100
15	5.62	16.41	6.67	0.925	-83	0.76	[illegible]	100
20 *	6.92							250
11/11/99 0910	6.67	12.40	6.92	0.910	-89	11.25	399.0	150

Water sample:
Time collected: 11/11/99 0910
Total volume of purged water removed: ~900 mL

Physical appearance at start
Color Colorless
Odor No
Sheen/Free Product No

Physical appearance at sampling
Color Colorless
Odor No
Sheen/Free Product No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40ml	VOA-VIAL	3	NO	None	~7.0

Notes: * Well pumped dry

RACER0060823

iam:ers/div76/admin/4 notes/micrlog3

O'Brien & Gere Engineers, Inc.			Low Flow Ground Water Sampling Log		
Date	11/ 6 /99	Personnel	Kit, KGB, CJO	Weather	Cloudy, 60°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T 15
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 9.21 ft.
Depth to Water * 6.49 ft.
Length of Water Column 2.72 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(1155)	6.49							
5	6.90	16.74	6.83	1.46	-107	2.20	106.0	100
10	7.05	16.93	6.82	1.47	-106	1.52	97.6	100
15	7.20	16.94	6.82	1.48	-103	1.64	89.3	100
20	7.37	16.95	6.81	1.47	-102	1.36	73.7	100
30 *	7.80	16.89	6.80	1.46	-98	2.30	4.7	100
35	8.00	16.90	6.81	1.46	-100	1.22	3.4	100
40	8.15	16.90	6.82	1.46	-104	0.89	2.8	100
45	8.30	16.90	6.85	1.47	-106	0.88	3.6	100
50	8.44	16.90	6.86	1.47	-107	0.83	4.0	100
55	8.57	16.92	6.88	1.48	-104	1.00	7.7	100
60 ☆								
11/11/99 0830	7.09	10.13	6.29	1.31	5.0	10.87	19.2	1000

Water sample:

Time collected: 11/11/99 0830

Total volume of purged water removed: ~1200 mL

Physical appearance at start
Color Cloudy-grey
Odor No
Sheen/Free Product No

Physical appearance at sampling
Color Colorless
Odor No
Sheen/Free Product No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40mL	VOA-VIAL	3	No	NONE	~7.0

Notes: * Flushed flow through cell.
☆ Well pumped dry

RACER0060824

jam:ers/div76/admin/4_notes/micrlog3 April 25, 1997

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	11/ 1 /99	Personnel	KWB, PGB, CJO	Weather	sunny, 40°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T-18
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 8.06 ft.
Depth to Water * 7.99 ft.
Length of Water Column 0.07 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	7.99	DRY						

Water sample:

Time collected: ______

Total volume of purged water removed: ______

Physical appearance at start
Color DRY
Odor
Sheen/Free Product

Physical appearance at sampling
Color DRY
Odor
Sheen/Free Product

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
—	—	—	—	—	—

Notes: Not enough water to sample

RACER0060825

O'Brien & Gere Engineers, Inc. — **Low Flow Ground Water Sampling Log**

Date	11/ 11 /99	Personnel	760/C00/KB.	Weather	40 Sunny
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T-21
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 13.0 ft.
Depth to Water * 9.40 ft.
Length of Water Column 3.60 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 1:00	9.40							100
5	9.60							175
10	10.03							200
15	10.25							200
20	10.65							200
25	11.01							200
30	11.30							200
35	11.77							200
40	12.05							200
45	12.70							200
50	12.67							
55	12.80							
60	Dry.							

Water sample:

Time collected: 1430

Total volume of purged water removed: ~2,000 ML

Physical appearance at start
Color Slightly Cloud
Odor Paint thinner - Strong odor.
Sheen/Free Product Globules on Bailer.

Physical appearance at sampling
Color cloudy
Odor Yes
Sheen/Free Product Yes - globules

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40ML	VOA-VIAL	3	NO	NONE	~7.0

Notes: Field Measurements not taken due to observed globules of free product. do not want to foul flow thru cell.

RACER0060626

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date	11/ 10 /99	Personnel	KinB, PGB, CPO	Weather	Cloudy 55°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T-24
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 10.31 ft.

Depth to Water * 6.50 ft.

Length of Water Column 3.81 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	mS/cm Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(1315)	6.50							
5	6.96	18.39	6.74	1.10	-69	1.24	45.9	100
10	7.27	18.41	6.73	1.11	-64	0.95	39.2	100
15	7.53	18.39	6.74	1.11	-68	0.81	32.2	100
20	7.75	18.44	6.73	1.11	-69	0.76	35.3	100
25	7.97	18.44	6.73	1.11	-68	0.71	33.3	100
30	8.13	18.46	6.73	1.10	-70	0.66	24.6	100
35	8.35	18.49	6.74	1.07	-74	0.64	18.8	100
40	8.57	18.48	6.73	1.04	-75	0.66	14.8	100
45	8.72	18.49	6.75	1.03	-79	0.67	13.7	100
50	8.99	18.51	6.76	1.04	-83	0.67	13.3	100
55	9.25	18.51	6.75	1.04	-84	.72	11.8	100
60	9.44	18.46	6.76	1.05	-85	.74	13.7	100
X								
11/11/99 0845	6.66	11.82	6.86	0.94	-34	9.98	16.2	100

Water sample:

Time collected: 11/11/99 0845

Total volume of purged water removed: ~1450 mL

Physical appearance at start
Color Cloudy
Odor NO
Sheen/Free Product NO

Physical appearance at sampling
Color Colorless
Odor —
Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40mL	VOA-VIAL	3	NO	NONE	~7.0

Notes: X Pumped well dry

RACER0060827

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date	11/ 11 /99	Personnel	KwB, PGB, CPO	Weather	Sunny, 35°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T-36
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 10.20 ft.

Depth to Water * 8.06 ft.

Length of Water Column 2.14 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(1320)	8.69 ~~8.06~~	16.69	6.91	1.56	-108	1.82	154	
5	8.99	16.69	3.92	1.76	-107	1.57	141	190
10	9.48	16.25	6.93	1.78	-96	1.18	60.8	190
15 *								
20								
25								
11/12(1000)	9.58	12.31	6.99	1.61	-107	10.69	36.8	100

Water sample:

Time collected: 1000

Total volume of purged water removed: ~650 ml

Physical appearance at start

Color clear

Odor None

Sheen/Free Product No

Physical appearance at sampling

Color Colorless

Odor None

Sheen/Free Product No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40ML	VOA-VIAL	3	No	None	~7.0

Notes: * Well Pumped Dry Collect Blind Dup #3

RACER0060828

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	11/11/99	Personnel	KWB, PGB, CPO	Weather	sunny 40°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T-29
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 10.20 ft.
Depth to Water * 5.31 ft.
Length of Water Column 4.89 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1350)	5.41	14.73	7.66	0.88	-13	3.27	134	225
5	5.52	14.73	7.64	0.88	-13	2.58	126	225
10	5.52	14.54	7.65	0.863	-9	2.37	98.1	200
15	5.52	14.46	7.64	0.82	-2	3.04	66.5	200
20	5.52	14.42	7.62	0.833	4	4.53	46.7	200
25	5.53	14.21	7.57	0.819	13	5.57	34.9	200
30	5.53	14.09	7.58	0.809	19	5.80	26.1	200
35	5.53	14.08	7.57	0.805	24	6.03	25.1	200
40	5.53	14.05	7.57	0.800	28	6.17	22.2	200
45	5.53	14.03	7.56	0.796	31	6.24	21.1	200

Water sample:

Time collected: 1440

Total volume of purged water removed: ~2200 mL

Physical appearance at start
Color clear
Odor —
Sheen/Free Product NO

Physical appearance at sampling
Color clear
Odor —
Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA - VIAL	3	NO	NONE	~7.0

Notes:

RACER0060829

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date	11/11/99	Personnel	KWB, PGB	Weather	Sunny 40°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	T-33B'
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 10.08 ft.

Depth to Water * 9.90 ft.

Length of Water Column 0.18 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	9.90	DRY						

Water sample:

Time collected: —

Total volume of purged water removed: —

Physical appearance at start

Color DRY

Odor

Sheen/Free Product

Physical appearance at sampling

Color DRY

Odor

Sheen/Free Product

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
—	—	—	—	—	—

Notes: Not enough water to sample

RACER0060830

O'Brien & Gere Engineers, Inc. **Low Flow Ground Water Sampling Log**

Date	11/05/99	Personnel	PGB/CPO	Weather	60 sunny
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	MW-1S
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 14.17 ft.
Depth to Water * 6.99 ft.
Length of Water Column 7.18 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

250

Elapsed Time	Depth To Water	Temperature	pH	ms/m Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	6.99							
10	7.38	16.14	7.21	83	8.2	5.4	4.7	~~175~~ 170
15	~~7.19~~ 7.40	16.09	7.13	83	13	5.0	2.7	170
20	7.44	16.12	7.11	83	-24	4.9	0.1	185
25	7.45	16.16	7.09	83	-38	1.5	4.9	185
30	7.48 ~~7.48~~	15.98	7.08	83	-47	1.1	0.1	185
35	7.42	16.03	7.18	84	-57	0.9	0.1	150
40	7.41	16.36	7.05	84	-63	0.8	0.1	150
45	7.43	16.52	7.05	84	-66	0.8	0.1	150
50	7.45	16.48	7.06	84	-66	0.8	0.1	150
55	7.45	16.49	7.05	84	-68	0.8	0.1	150
60	7.45	16.55	7.05	84	-70	0.8	0.1	150
65	7.45	16.50	7.05	84	-71	0.8	0.1	150

Water sample:

Time collected: 1430

Total volume of purged water removed: ~2,000 mL

Physical appearance at start
Color Clear
Odor None
Sheen/Free Product —

Physical appearance at sampling
Color Colorless
Odor None
Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	Glass vial	3	—	—	—
1 liter	Amber Glass	2	—	—	—
1 liter	Poly	1	—	Nitric Acid	<2
1/2 liter	Poly	1	—	Na OH	>12

Notes:

RACER0060831

O'Brien & Gere Engineers, Inc. **Low Flow Ground Water Sampling Log**

Date	11/05/99	Personnel	CPO/PGB/KWB	Weather	~60°F, Partly Sunny
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	MW-1D
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 29.83 ft.
Depth to Water * 8.17 ft.
Length of Water Column 20.66 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

250

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	8.17							150
10	9.05	15.56	7.53	1.06	-48	2.94	11.6	150
15	9.11	15.31	7.54	.999	-76	2.00	11.6	175
20	9.14	15.28	7.44	1.07	-90	1.01	13.0	175
25	9.15	15.19	7.47	0.90	-90	.77	12.9	150
30	9.16	14.95	7.52	0.895	-86	.56	29.3	150
35	9.15	14.95	7.52	0.896	-86	1.02	24.3	140
40	9.04	15.27	7.51	0.896	-86	1.15	25.4	140
45	9.05	15.43	7.41	1.09	-84	0.162	14.6	140
50	9.05	15.41	7.46	.899	-87	0.52	11.1	140
55	9.05	15.31	7.46	.899	-87	0.92	8.3	140
60	9.05	15.31	7.54	.900	-87	0.91	8.2	140
65	9.05	15.30	7.46	.900	-88	0.58	5.9	140

Water sample:

Time collected: 1400

Total volume of purged water removed: ~2,000 mL

Physical appearance at start
Color Colorless
Odor NO
Sheen/Free Product NO

Physical appearance at sampling
Color Colorless
Odor NO
Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	NO	NONE	~7
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 mL	Poly	1	NO	NaOH	>12

Notes:

RACER0060832

O'Brien & Gere Engineers, Inc. **Low Flow Ground Water Sampling Log**

Date 11/8/99 Personnel KWB, IPO, PGB Weather Cloudy, 35°

Site Name GM - Former IFG Facility Evacuation Method peristaltic pump Well # MW-2S

Site Location Syracuse, NY Sampling Method peristaltic pump Project # 21535

Well information:

Depth of Well * 15.62 ft.

Depth to Water * 8.08 ft.

Length of Water Column 7.54 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

PGB

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(1010)	8.08							
5	8.24	12.28	7.28	65	241	8.8	0.1	150
10	8.26	12.37	7.26	65	246	8.8	0.1	150
15	8.28	12.75	7.26	65	247	8.6	0.1	150
20	8.26	13.19	7.27	65	245	8.4	0.1	125
25	8.25	13.52	7.26	65	242	8.2	0.1	125
30	8.25	13.61	7.26	65	240	8.1	0.1	125
35	8.25	13.65	7.26	65	230	8.0	0.1	125

Water sample:

Time collected: 1100 Total volume of purged water removed: ~1.05 gal

Physical appearance at start
Color colorless
Odor yes
Sheen/Free Product sheen

Physical appearance at sampling
Color colorless
Odor yes
Sheen/Free Product sheen

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA - glass	3	no	none	~7
1 Liter	Amber glass	2	no	none	~7
1 Liter	Poly	1	no	Nitric Acid	<2
500 ml	Poly	1	no	NaOH	>12

Notes:

RACER0060833

jam:ers/div76/admin/4_notes/micrlog3

April 25, 19

O'Brien & Gere Engineers, Inc.			**Low Flow Ground Water Sampling Log**		
Date	11/ 8 /99	Personnel	KLB, CPO, PbB	Weather	cloudy, 35°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	MW-2D
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 30.63 ft.

Depth to Water * 10.15 ft.

Length of Water Column 20.48 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

CPO

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1010)	10.15							
5	10.89	11.76	7.35	1.44	-3	5.16	30.5	125
10	10.96	11.82	7.34	1.44	-4	4.33	31.1	125
15	11.01	12.22	7.31	1.44	-21	2.78	23.8	125
20	10.98	12.48	7.31	1.44	-26	2.55	24.7	100
25	10.96	[illegible]	7.31	1.45	[illegible]	[illegible]	22.4	100
30	10.96	12.81	7.30	1.44	-41	2.49	21.1	100
35	10.96	12.90	7.29	1.45	-44	2.50	20.8	100
40	10.96	12.93	7.29	1.45	-45	2.47	19.9	100

Water sample:

Time collected: 1115

Total volume of purged water removed: ~900 mL

Physical appearance at start
Color Clear
Odor No
Sheen/Free Product None

Physical appearance at sampling
Color Clear
Odor No
Sheen/Free Product None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	NO	None	~7
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 mL	Poly	1	NO	NaOH	>12

Notes:

RACER0060834

O'Brien & Gere Engineers, Inc. — **Low Flow Ground Water Sampling Log**

Date	11/5/99	Personnel	KWB, CPO, PGB	Weather	Sunny, 55°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	MW-3S
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 16.87 ft.

Depth to Water * 8.59 ft.

Length of Water Column 8.28 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (0955)	8.59							
5	8.91	15.06	6.86	89	155	4.6	4.4	175
10	9.05	14.82	6.74	89	54	1.5	3.7	175
15	9.21	15.20	6.74	88	7	1.2	1.2	175
20	9.29	15.34	6.74	88	-13	1.1	0.6	200
25	9.31	15.27	6.74	89	-22	1.3	0.1	150
30	9.28	15.00	6.76	89	-29	0.7	0.1	150
35	9.28	15.05	6.76	88	-32	0.7	0.1	150
40	9.28	15.15	6.77	87	-35	0.8	0.1	150

Water sample:

Time collected: 1050

Total volume of purged water removed: ~1400 mL

Physical appearance at start
Color: Colorless
Odor: No
Sheen/Free Product: No

Physical appearance at sampling
Color: Colorless
Odor: No
Sheen/Free Product: No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA - Vial	3	No	[illegible]	[illegible]
1 L[illegible]	Amber [illegible]	[illegible]	No	[illegible]	[illegible]
1 Liter	Po[illegible]	1	No	Nitric Acid	<2
500 ml	Po[illegible]	1	No	NaOH	>12

Notes: collected Blind Dupl.

RACER0060835

O'Brien & Gere Engineers, Inc. — **Low Flow Ground Water Sampling Log**

Date: 11/5/99 — Personnel: KWB, CPO, PGB — Weather: sunny, 55°
Site Name: GM - Former IFG Facility — Evacuation Method: peristaltic pump — Well #: MW-30
Site Location: Syracuse, NY — Sampling Method: peristaltic pump — Project #: 21535

Well information:

Depth of Well *: 37.35 ft.
Depth to Water *: 8.71 ft.
Length of Water Column: 28.64 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (0945)	8.71							
5	10.21	13.45	7.44	0.97	0	1.4	530	200
10	10.34	13.41	7.43	0.98	-28	0.95	391	200
15 *	10.36	13.23	7.42	0.98	-38	0.87	400	200
20	10.15	13.31	7.42	0.95	-48	8.2	319	200
25	10.19	13.50	7.42	1.00	-59	1.38	421	200
30	10.22	13.28	7.42	1.00	-65	0.90	397	200
35 *	10.18	13.31	7.42	1.00	-68	0.76	388	150
40	9.91	13.69	7.43	1.00	-74	4.69	410	150
45	9.86	14.25	7.50	1.02	-83	.82	299	150
50	9.86	14.17	7.51	1.02	-85	0.74	247	150
55	9.76	14.55	7.51	1.02	-88	0.72	173	150
60 *	9.74	14.76	7.52	1.02	-89	0.74	128	150
70 *	9.75	14.77	7.54	1.01	-84	2.64	74.6	150
80 *	9.73	14.66	7.55	1.01	-83	1.89	38.2	150
85	9.74	14.62	7.46	1.02	-85	.81	34.5	150
90	9.73	14.35	7.46	1.02	-85	.72	29.8	150

Water sample:

Time collected: 1210 — Total volume of purged water removed: ~2900 mL

Physical appearance at start — Color: cloudy white — Odor: None — Sheen/Free Product: –
Physical appearance at sampling — Color: Colorless — Odor: None — Sheen/Free Product: No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40mL	VOA-VIAL	3	NO	None	~7
1Liter	Amber glass	2	NO	None	~7
1Liter	Poly	1	NO	Nitric acid	<2
500mL	Poly	1	NO	Na OH	>12

Notes: * Flushed [illegible] cell.

RACER0060836

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date 11/3/99
Site Name Former IFG Facility
Site Location Syracuse, NY

Personnel KWB, CPO, PGB
Evacuation Method Peristaltic pump
Sampling Method Peristaltic pump

Weather Cloudy ~45°F
Well # OBG 4S
Project #

Well information:

Depth of Well * 16.63 ft.
Depth to Water * 10.49 ft.
Length of Water Column 6.14 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

PGB

Water parameters:

Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time		Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1145)		10.49							
5		10.91	13.98	6.67	1.04	-78	3.3	25.3	250
10		11.15	14.36	6.70	1.06	-87	2.3	15.7	250
15		11.25	13.96	6.69	1.06	-87	2.4	5.6	250
20		11.34	13.75	6.69	0.99	-89	0.7	3.8	250
25		11.38	13.54	6.69	1.05	-91	0.7	4.3	210
30		11.41	13.42	6.70	1.04	-96	0.6	5.7	210
35		11.42	13.34	6.73	1.04	-103	0.6	5.5	190
40		11.43	13.60	6.76	1.04	-108	0.6	1.0	190
45		11.43	13.65	6.78	1.04	-110	0.6	1.0	190
[illegible]		11.46	13.85	6.80	1.06	-110	0.6	6.0	190
[illegible]		11.45	[illegible]	6.81	1.06	-111	0.6	1.0	190
60		11.45	13.75	6.83	1.05	-112	0.6	1.0	190

Water sample:

Time collected: 1300

Total volume of purged water removed: ~7600 ml

Physical appearance at start
Color cloudy
Odor none
Sheen/Free Product no

Physical appearance at sampling
Color clear
Odor no
Sheen/Free Product /

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	[illegible]	3	[illegible]	[illegible]	[illegible]
1 L	[illegible]	2	[illegible]	[illegible]	[illegible]
1 L	[illegible]	1	[illegible]	[illegible]	<2
500 ml		1	[illegible]	[illegible]	>12

Notes:

RACER0060837

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date 11/3/99 Personnel KWB, LPO, PGB Weather Overcast, windy, ~45 F

Site Name GM - Former IFG Facility Evacuation Method peristaltic pump Well # OBG-MW-4D

Site Location Syracuse, NY Sampling Method peristaltic pump Project # 21535

Well information:

Depth of Well * 37.14 ft.

Depth to Water * 10.66 ft.

Length of Water Column 26.46 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column

Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute

Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1145)	10.68							325
5	10.79	12.30	11.53	0.12	-104	1.4	118	325
10	10.82	12.20	11.65	0.12	-164	0.8	77.6	375
15	10.83	12.3	11.59	0.11	-190	0.8	65.0	375
20	10.84	12.1	10.98	81	-162	0.8	126	200
25	10.77	11.8	9.06	71	-131	0.8	65.2	200
30	10.77	11.8	8.67	78	-155	0.8	55.3	200
35	10.81	11.7	8.26	83	-162	0.8	47.1	300
40	10.82	11.7	7.83	88	-154	0.8	117	300
45	10.82	11.8	7.65	89	-145	0.8	92.9	300
* 50	10.82	11.8	7.46	0.1	-119	1.5	11.0	300
55	10.82	11.8	7.43	0.1	-121	0.8	7.1	300
60	10.83	11.9	7.41	0.1	-123	0.6	6.8	300
65	10.83	12.0	7.41	0.1	-123	0.6	6.9	300
70	10.83	12.2	7.39	0.1	-125	0.6	6.1	300

Water sample:

Time collected: 1315

Total volume of purged water removed: ~4400 ML

Physical appearance at start

Color cloudy

Odor None

Sheen/Free Product No

Physical appearance at sampling

Color clear

Odor None

Sheen/Free Product No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes: * Flushed cylinder w/ DI water per DEC request.

RACER0060838

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date: 11/5/99 | Personnel: KWB, CPO | Weather: cloudy 50°

Site Name: GM - Former IFG Facility | Evacuation Method: peristaltic pump | Well #: MW-5S

Location: Syracuse, NY | Sampling Method: peristaltic pump | Project #: 21535

Well information:

Depth of Well *: 18.41 ft.
Depth to Water *: 8.70 ft.
Length of Water Column: 9.71 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

CPO

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(0800)	8.70							200
5	8.72	13.13	6.78	1.01	12	3.12	237	200
10	8.72	13.21	6.86	0.98	0	2.33	203	200
15	8.71	13.26	6.88	0.97	-7	2.03	170	200
20	8.72	13.33	6.89	0.97	-12	1.65	162	200
25 *	8.72	12.96	6.96	0.92	-35	5.41	5.1	200
30	8.72	13.39	6.97	0.91	-38	1.46	5.4	200
35	8.72	13.56	6.97	0.91	-42	0.9	28.7	200
40	8.72	13.65	6.98	0.92	-44	0.81	29.5	200
45	8.72	13.69	6.96	0.91	-47	0.69	27.2	200
50	8.72	13.64	6.95	0.91	-48	0.88	26.3	200
		13.58	6.96	0.91	-52	0.69	25.9	200

Water sample:

Time collected: 0920

Total volume of purged water removed: ~2500 mL

Physical appearance at start
Color: slight brown cloudy
Odor: -
Sheen/Free Product: NO

Physical appearance at sampling
Color: clear
Odor: -
Sheen/Free Product: NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40mL	VOA-VIAL	3	No	None	~7
1Liter	Amber glass	2	No	None	~7
1L[illegible]	P[illegible]	1	No	Nitric acid	<2
500 mL	P[illegible]	1	No	NaOH	>12

Notes: * Flushed flow through cell.

RACER0060839

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date 11/5/99 | Personnel KuB, CPO | Weather cloudy 50°F

Site Name GM - Former IFG Facility | Evacuation Method peristaltic pump | Well # MW-5D

Site Location Syracuse, NY | Sampling Method peristaltic pump | Project # 21535

Well information:

Depth of Well * 37.52 ft.

Depth to Water * 8.31 ft.

Length of Water Column 19.21 ft.

* Measurements taken from

- [X] Top of Well Casing KuB
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (0800)	8.31							150
5	8.32	12.13	6.79	0.11	278	4.6	145.0	150
10	8.32	12.11	6.90	0.11	254	3.6	124.0	150
15	8.33	11.96	6.99	0.11	208	2.2	84.6	150
20	8.33	11.96	7.02	0.12	166	1.9	30.0	150
25	8.33	12.01	7.04	0.12	128	1.4	26.8	150
35 *	8.33	12.19	7.07	0.13	80	3.2	2.2	150
40	8.33	12.27	7.08	0.13	46	1.5	0.5	150
45	8.33	12.43	7.08	0.13	25	1.5	0.5	150
50	8.33	12.45	7.07	0.13	14	1.3	0.5	150
55	8.33	12.45	7.07	0.13	-3	1.1	0.5	150

Water sample:

Time collected: 0940

Total volume of purged water removed: ~1650 mL

Physical appearance at start
Color slight brown cloudy
Odor -
Sheen/Free Product NO

Physical appearance at sampling
Color clear
Odor -
Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ML	VOA-vial	3	NO	None	~7
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 mL	Poly	1	NO	NaOH	>12

Notes: * flushed flow through cell, Took time to refill

RACER0060840

jam:ers/div76/admin/4_notes/micrlog3 April 25, 199

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date 11/08/99 | Personnel CPO, PGB, KWB | Weather OVERCAST, ~45 °F

Site Name GM - Former IFG Facility | Evacuation Method peristaltic pump | Well # P-2

Site Location Syracuse, NY | Sampling Method peristaltic pump | Project # 21535

Well information:

Depth of Well * 10.02 ft.

Depth to Water * 3.57 ft.

Length of Water Column 6.45 ft.

* Measurements taken from

- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1420 hrs)	4.83	15.62	7.39	0.27	-164	2.2	70.8	100
5	4.92	15.97	7.27	0.27	-156	1.5	65.8	100
10	4.98	16.23	7.18	0.28	-149	1.4	59.1	100
15	4.95	16.36	7.14	0.28	-144	1.3	52.3	100
20	4.90	16.36	7.09	0.29	-139	1.2	49.2	100
25	4.89	16.30	7.06	0.29	-134	1.2	48.0	100
30	4.92	16.31	7.03	0.29	-129	1.2	46.3	100
35	4.96	16.22	7.00	0.28	-119	1.3	19.7	125
40	4.99	16.20	7.00	0.29	-121	1.5	35.5	125
45	5.06	16.20	7.00	0.29	-121	1.6	37.9	125
50	5.00	16.19	7.00	0.29	-121	1.7	40.2	125
55	4.99	16.12	6.99	0.29	-119	1.4	40.1	125

Fl… Cy…

Water sample:

Time collected: 1530

Total volume of purged water removed: 1325 mL

Physical appearance at start
Color gray
Odor Sulfur
Sheen/Free Product NO

Physical appearance at sampling
Color Colorless
Odor Sulfur
Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
1 Liter	Amber glass	2	NO	None	~7
500 mL	Poly	1	NO	Na OH	>12

Notes:

RACER0060841

O'Brien & Gere Engineers, Inc.	Low Flow Ground Water Sampling Log

Date 11/ 3 /99
Site Name GM - Former IFG Facility
Site Location Syracuse, NY
Personnel KWB, PGB, CPO
Evacuation Method peristaltic pump
Sampling Method peristaltic pump
Weather Cloudy 40°
Well # P-5
Project # 21535

Well information:

Depth of Well * 10.69 ft.
Depth to Water * 9.47 ft.
Length of Water Column 1.22 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1355)	9.47	—	—	—	—	—	—	75

Water sample:

Time collected: NO SAMPLE Collected.
Total volume of purged water removed: ~300 ML

Physical appearance at start
Color BLACK
Odor Yes - Pet.
Sheen/Free Product Yes - sheen

Physical appearance at sampling
Color
Odor
Sheen/Free Product

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes: Pumped about 300 ml of black liquid w/ Pet odor before went dry

RACER0060842

O'Brien & Gere Engineers, Inc. | **Low Flow Ground Water Sampling Log**

Date 11/18/99 | Personnel KMB, PGB | Weather Cloudy, 65°
Site Name GM - Former IFG Facility | Evacuation Method peristaltic pump | Well # P-9
Site Location Syracuse, NY | Sampling Method peristaltic pump | Project # 21535

Well information:

Depth of Well * 10.08 ft.
Depth to Water * 6.78 ft.
Length of Water Column 3.30 ft.

* Measurements taken from
- X Top of Well Casing
- Top of Protective Casing
- (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(1030)	6.78							100
5	7.27	17.52	7.57	0.656	56	5.39	260.0	100
10	7.64	17.35	8.10	0.655	43	3.21	161.0	100
15	8.21	17.06	7.99	0.686	59	3.65	143.0	100
20	8.50	16.99	7.96	0.698	65	3.58	139.0	100
25	8.80	16.94	7.96	0.699	71	3.34	136.0	100
30	9.05	16.93	7.97	0.696	73	3.16	132.0	100
35	9.29	16.91	7.99	0.691	75	3.03	141.0	100
40	9.37	16.96	7.94	0.685	79	3.20	122.0	100
45	9.62	16.89	7.97	0.689	85	3.15	146.0	100
50 *								
	6.69	11.85	5.71	50 ms/m	232	9.01	43.1	100

Water sample:
Time collected: 0915 - 11/11/99 | Total volume of purged water removed: ~1100 mL

Physical appearance at start
Color Gray
Odor No
Sheen/Free Product None

Physical appearance at sampling
Color Colorless
Odor No
Sheen/Free Product None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	NO	None	~7
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 mL	Poly	1	NO	NaOH	>12

Notes: * Well pumped dry

RACER0060843

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date 11/02/99
Site Name Former IFG Facility
Site Location Syracuse, NY

Personnel CPO/KWB/PGB
Evacuation Method Peristaltic Pump
Sampling Method Peristaltic Pump

Weather Partly Cloudy; Windy; ~50°F
Well # U-1S
Project # 21535

Well information:

Depth of Well * 11.09 ft.
Depth to Water * 5.28 ft.
Length of Water Column 5.81 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters:

Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (0945)	5.28							
5	6.57	17.71	7.67	.569	-163	.8	10.8	300
10	6.74	17.70	7.50	.574	-158	.8	7.2	300
15	7.01	17.71	7.44	.589	-146	.8	2.8	250
20	7.25	17.74	7.41	.609	-144	.9	5.0	150
25	7.40	17.76	7.41	.627	-145	.9	5.4	150
30	7.54	17.79	7.44	.649	-149	1.0	5.9	150
35	7.68	17.81	7.44	.672	-151	1.0	6.2	100
40	7.77	17.75	7.41	.688	-147	1.1	6.2	100
45	7.85	17.72	7.41	.696	-145	1.1	13.5	100
50	7.92	17.69	7.49	.706	-156	1.1	28.3	100
55	7.97	17.62	7.46	.713	-154	1.1	24.5	100
60	8.01	17.61	7.45	.716	-153	1.1	19.8	100
65	8.10	17.64	7.44	.721	-150	1.1	19.7	75
70	8.11	17.66	7.45	.723	-149	1.1	19.5	75
75	8.25	17.67	7.37	.737	-143	1.0	17.1	75
80	8.31	17.58	7.37	.750	-142	1.0	20.4	75
85	8.37	17.53	7.37	.756	-142	1.1	26.8	75
90	8.44	17.63	7.38	.765	-147	0.9	23.9	75
95	8.54	17.60	7.35	.773	-143	0.9	25.8	75

Water sample:

Time collected: 0815 hrs - 11/3/99

Total volume of purged water removed: ~3700 mL

Physical appearance at start
Color Colorless
Odor No
Sheen/Free Product No

Physical appearance at sampling
Color See Page 2
Odor
Sheen/Free Product

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
See Page 2					

Pg 1 of 2

Notes:

RACER0060844

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date 11/02/99

Site Name Former IFG Facility

Site Location Syracuse, NY

Personnel CPO/KWB/PGB

Evacuation Method Peristaltic Pump

Sampling Method Peristaltic Pump

Weather Partly Cloudy; windy ~50°F

Well # U-1S

Project # 21533

Well information:

Depth of Well * 11.09 ft.

Depth to Water * 5.28 ft.

Length of Water Column 5.81 ft.

* Measurements taken from

- [✓] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters:

Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
100	8.65	17.56	7.34	0.785	-140	0.9	28.8	75
105	8.74	17.54	7.33	0.798	-137	1.0	32.1	75
110	8.80	17.54	7.32	.808	-134	1.0	28.3	75
115	8.88	17.56	7.31	.811	-131	1.0	25.3	75
120	8.91	17.57	7.30	.810	-130	1.1	26.2	75
125	8.99	17.58	7.32	.816	-128	1.0	27.3	75
130	9.03	17.60	7.33	.818	-126	1.0	28.9	75
135	9.10	17.61	7.29	.825	-124	1.0	31.5	75
140	9.17	17.62	7.28	.831	-122	1.0	36.3	75
145	9.27	17.65	7.29	.831	-122	1.0	35.6	75
[illegible]	9.30	17.65	7.29	.830	-123	1.0	36.2	75
155	10.06	17.85	7.29	.832	-126	0.9	>1000	400
160	DRY							
11/3/99	0815hrs - 5.91	13.81	7.57	.896	82	7.1	1.8	150

Water sample:

Time collected: 0815hrs (11/3/99)

Total volume of purged water removed: ~3700mL

Physical appearance at start
Color See Page 1
Odor
Sheen/Free Product

Physical appearance at sampling
Color Colorless
Odor No
Sheen/Free Product No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-Vial	3	No	None	~7
1 Liter	Amber glass	2	No	None	~7
1 Liter	Poly	1	No	Nitric Acid	<2
500 mL	Poly	1	No	NaOH	>12

Pg 2 of 2

Notes:

RACER0060845

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date 11/02/99
Site Name Former IFG Facility
Site Location Syracuse, NY

Personnel PGB/KWB/CPO
Evacuation Method Peristaltic Pump
Sampling Method Peristaltic Pump

Weather Partly Cloudy, windy 50's
Well # U-1D
Project # 21535

Well information:

Depth of Well * 19.87 ft.
Depth to Water * 7.01 ft.
Length of Water Column 12.86 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters:

Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	mS/cm Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
								225
0 (0945)	7.01							
5	8.25	16.62	7.09	0.75	-67	0	9.3	225
10	8.28	16.53	7.25	0.764	-86	0	1.2	180
15	8.32	16.45	7.31	0.770	-93	0	1.2	180
20	8.36	16.38	7.32	0.779	-97	0	1.2	180
25	8.40	16.31	7.32	0.786	-98	0	4.8	200
30	8.41	16.27	7.32	0.793	-98	0	1.2	200
35	8.45	16.21	7.30	0.801	-98	0	1.2	180
40	8.51	16.23	7.31	0.810	-97	0	1.2	180
45	8.32	16.19	7.31	0.817	-98	0	1.2	150
50	8.21	16.15	7.28	0.825	-95	0	1.2	130
55	8.21	16.15	7.28	0.830	-95	0	1.2	130
60	8.21	16.12	7.29	0.833	-94	0	1.2	130

Water sample:

Time collected: 1045

Total volume of purged water removed: ~2300 mL

Physical appearance at start
Color Colorless
Odor No
Sheen/Free Product No

Physical appearance at sampling
Color Colorless
Odor No
Sheen/Free Product No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	No	None	~7
1 Liter	AMBER-GLASS	2	No	None	~7
1 Liter	Poly	1	No	Nitric Acid	<2
500 mL	Poly	1	No	NaOH	>12

Notes:

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date: 11/10/99
Personnel: CPo/PGB/KaB
Weather: overcast, ~55°F
Site Name: GM - Former IFG Facility
Evacuation Method: peristaltic pump
Well #: M-1S
Site Location: Syracuse, NY
Sampling Method: peristaltic pump
Project #: 21535

Well information:

Depth of Well *: 20.53 ft.
Depth to Water *: 13.08 ft.
Length of Water Column: 7.45 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	mS/m Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1215)	14.26	13.91	7.08	0.11	-130	2.5	60.2	100
5	14.59	13.81	7.10	0.11	-132	1.7	61.6	100
10	14.92	13.66	7.11	0.11	-134	1.4	67.5	130
15	15.19		FLUSH	CYLINDER				130
20	15.37	13.51	7.08	97 mS/m	-129	1.8	1.2	130
25	15.54	13.47	7.10	97	-130	1.3	3.4	130
30	15.69	13.39	7.09	97	-130	1.1	0.2	130
35	15.80	13.36	7.08	98	-129	0.6	01	130
40	15.83	13.29	7.07	99	-126	0.7	0.1	130
45	15.83	13.23	7.04	0.11 S/m	-123	0.6	0.1	130
50	15.83	13.18	7.02	0.11	-119	0.7	0.1	130
55	15.83	13.19	7.01	0.11	-117	0.6	0.1	130

Water sample:

Time collected: 1430

Total volume of purged water removed: ~1500 mL

Physical appearance at start
Color: Lt. gray
Odor: NO
Sheen/Free Product: NO

Physical appearance at sampling
Color: Colorless
Odor: No
Sheen/Free Product: No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	NO	None	~7
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 mL	Poly	1	NO	NaOH	>12

Notes: Collect MS/MSD and Blind Duplicate 2

RACER0060847

O'Brien & Gere Engineers, Inc. — **Low Flow Ground Water Sampling Log**

Date	11/ 9 /99	Personnel	KiB, PGB CPD	Weather	cloudy 60°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	W-10
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 32.70 ft.
Depth to Water * 13.08 ft.
Length of Water Column 19.62 ft.

* Measurements taken from

- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(1450)	1308							150
5	13.30	13.64	6.68	0.13	-73	1.2	153.0	150
10	13.30	13.39	6.68	0.10	-76	0.6	132.0	150
15	13.30	13.32	6.69	0.12	-80	0.5	84.2	150
20 *	13.30	13.31	6.70	0.12	-82	0.5	70.4	150
30	13.30	13.35	6.74	0.12	-77	2.4	15.1	150
35	13.30	13.39	6.74	0.12	-79	0.7	4.8	150
40	13.30	13.36	6.74	0.12	-80	0.7	4.3	150
45	13.30	13.14	6.74	0.11	-83	0.7	4.0	150

Water sample:

Time collected: 1515 — Total volume of purged water removed: ~1350 ML

Physical appearance at start — Color: Cloudy gray; Odor: none; Sheen/Free Product: no

Physical appearance at sampling — Color: Colorless; Odor: no; Sheen/Free Product: no

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40ML	VOA-VIAL	3	No	None	~7
1 Liter	Amber-glass	2	No	None	~7
1 Liter	Poly	1	No	Nitric Acid	<2
500mL	Poly	1	No	NaOH	>12

Notes: * [illegible]

RACER0060848

jam:ers/div76/admin/4_notes/micrlog3 April 25, 1997

O'Brien & Gere Engineers, Inc. — **Low Flow Ground Water Sampling Log**

Date	11/4/99	Personnel	KWB, CLO, PGB	Weather	Cloudy 40°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	W-6S
Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 17.67 ft.
Depth to Water * 8.29 ft.
Length of Water Column 9.38 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

PGB

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1005)	8.29							400
5	9.95	11.6	7.01	0.14	-147	2.5	146	150
10	10.15	12.0	7.06	0.14	-156	1.1	140	100
20 *	10.15	12.3	6.99	0.14	-139	2.0	66	100
25	10.15	12.1	6.98	0.15	-141	1.3	50.3	100
30	10.1[illegible]	12.0	6.99	0.15	-141	1.1	59.9	75
35	10.20	12.1	6.97	0.14	-141	1.2	49.7	75
40	10.22	12.2	6.98	0.15	-141	1.3	51.0	75
45	10.26	12.6	6.96	0.14	-142	1.2	54.0	75
50	10.30	12.7	6.96	0.14	-141	1.0	47.3	75
65 *	10.42	13.1	6.95	0.14	-135	1.0	53.2	75
70	10.48	13.3	6.99	0.14	-143	2.2	46.2	75
75	10.52	12.6	7.20	0.14	-136	1.1	46.8	75
80	10.54	12.6	6.99	0.14	-145	0.8	45.4	75
85	10.56	12.5	6.99	0.14	-145	0.8	42.4	75
90	10.55	12.5	7.04	0.14	-146	0.7	41.2	75
95	10.58	12.9	6.99	0.14	-146	0.8	42.2	75
100	10.58	12.4	7.01	0.14	-145	0.7	46.2	75
105	10.58	13.0	6.98	0.14	-143	0.8	42.3	75

Water sample:

Time collected: 1230

Total volume of purged water removed: ~1900 ml

Physical appearance at start
Color Greenish
Odor sulfur
Sheen/Free Product No

Physical appearance at sampling
Color slight yellow
Odor sulfur
Sheen/Free Product No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA [illegible]	3	No	None	~7
1 [illegible]	Amber glass	2	[illegible]	None	~7
[illegible]	Poly	1	[illegible]	Nitric [illegible]	<2
500 ml	Poly	1	No	NaOH	>12

Notes: * Flushed flow through cell. Took time to refill

RACER0060849

O'Brien & Gere Engineers, Inc. **Low Flow Ground Water Sampling Log**

Date: 11/ 4 /99
Personnel: KwB, RGB, LPO
Weather: Cloudy, 40°
Site Name: GM - Former IFG Facility
Evacuation Method: peristaltic pump
Well #: W-6D
Site Location: Syracuse, NY
Sampling Method: peristaltic pump
Project #: 21535

Well information:

Depth of Well *: 24.25 ft.
Depth to Water *: 8.37 ft.
Length of Water Column: 15.88 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1005)	8.37							200
5	9.09	11.01	8.02	1.70	-220	2.3	73.2	200
10	9.07	11.28	8.01	1.67	-220	1.6	53.4	200
15	9.08	11.61	7.97	1.62	-226	1.1	37.2	200
20	9.11	11.89	7.93	1.56	-211	0.9	21.6	200
25	9.12	11.91	7.89	1.52	-205	0.9	18.9	200
30	9.11	11.37	7.86	1.50	-198	0.7	[illegible]	200
35	9.11	11.90	7.83	1.50	-191	0.8	7.1	200
40	9.12	11.87	7.80	1.50	-184	0.8	3.8	200
45	9.12	12.02	7.77	1.51	-180	0.8	3.0	200
50	9.12	12.01	7.76	1.52	-178	0.7	1.1	200
55	9.12	12.14	7.74	1.53	-176	0.7	0.5	200
60	9.12	11.93	7.72	1.56	-173	0.9	0.1	200
65	9.12	12.02	7.71	1.57	-171	0.8	0.1	200

Water sample:

Time collected: 1130
Total volume of purged water removed: ~2800 ml

Physical appearance at start
Color: Greenish
Odor: sulfur
Sheen/Free Product: no

Physical appearance at sampling
Color: clear
Odor: —
Sheen/Free Product: NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	NO	[illegible]	<2
1 Liter	Amber [illegible]	2	NO	[illegible]	[illegible]
1 Liter	[illegible]	1	NO	[illegible]	<2
500 mL	[illegible]	1	NO	[illegible]	>12

Notes:

RACER0060850

O'Brien & Gere Engineers, Inc.		Low Flow Ground Water Sampling Log	
Date	11/ 8 /99	Personnel	KMB, LPO, PGB
Weather	Cloudy, 35°	Site Name	GM - Former IFG Facility
Evacuation Method	peristaltic pump	Well #	W-11B
Location	Syracuse, NY	Sampling Method	peristaltic pump
Project #	21535		

Well information:

Depth of Well * 11.54 ft.

Depth to Water * 7.37 ft.

Length of Water Column 4.17 ft.

* Measurements taken from

X	Top of Well Casing	LPO
	Top of Protective Casing	
	(Other, Specify)	

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(1145)	7.37							
5	7.86	13.16	6.90	0.14	-228	1.5	46.1	150
10	7.98	13.51	7.17	0.14	-245	1.2	46.6	150
15	8.07	13.80	7.18	0.14	-249	1.0	47.2	100
20	8.14	14.11	7.16	0.14	-249	1.0	48.6	100
25	8.19	14.18	7.14	0.14	-252	0.9	47.3	100
30	8.21	14.13	7.10	0.14	-250	0.7	41.9	100
35	8.22	14.01	7.08	0.14	-250	0.7	40.1	100
40	8.22	13.99	7.08	0.14	-252	0.7	39.3	100

Water sample:

Time collected: 1300

Total volume of purged water removed: ~800 ML

Physical appearance at start
Color clear
Odor sulfur
Sheen/Free Product NO

Physical appearance at sampling
Color clear
Odor sulfur
Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ML	VOA-VIAL	3	NO	None	~7
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 mL	Poly	1	NO	NaOH	>12

Notes:

RACER0060851

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date	11/ 8 /99	Personnel	MB, LPO, PGB	Weather	cloudy 35°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	W-11D
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 23.90 ft.
Depth to Water * 6.75 ft.
Length of Water Column 17.05 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

PGB

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1145)	6.75		~~7.59~~	~~1.33~~				
5	7.17	12.72	7.59	1.33	-127	3.16	304.0	150
10	7.12	12.72	7.57	1.33	-128	1.48	271.0	150
15	7.13	12.68	7.55	1.33	-127	1.27	252.0	100
20	7.28	12.93	7.55	1.33	-128	1.15	244.0	150
25	7.38	13.36	7.56	1.33	-129	1.11	204.0	150
35 *	7.51	13.49	7.50	1.33	-125	0.73	120.0	150
40	7.52	13.34	7.46	1.33	-125	0.74	122.0	150
45	7.54	13.29	7.48	1.33	-126	0.58	94.6	150
50	7.57	13.28	7.49	1.33	-128	0.55	79.8	150
55	7.55	13.23	7.48	1.32	-129	0.54	66.1	150
60	7.62	13.19	7.48	1.33	-124	0.62	54.6	150
65	7.67	13.15	7.48	1.33	-125	0.51	43.0	190
70	7.70	13.10	7.47	1.33	-125	0.47	34.8	190
75 *	7.62	13.22	7.47	1.33	-118	0.95	33.2	150
80	7.60	13.13	7.46	1.32	-120	0.55	30.7	150
85 ✱	7.32	12.54	7.49	1.34	-117	2.01	49.2	150
90	7.54	13.20	7.47	1.32	-118	0.88	44.6	150
95	7.80	13.22	7.47	1.33	-121	0.54	36.5	150
100	7.90	13.24	7.47	1.33	-123	0.45	37.3	150

Water sample:

Time collected: 1515

Total volume of purged water removed: ~5,800 ML

Physical appearance at start
Color brown, cloudy
Odor sulfur
Sheen/Free Product None

Physical appearance at sampling
Color clear
Odor sulfur
Sheen/Free Product None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ML	VOA-VIAL	3	NO	None	~7
1 Liter	AMBER [illegible]	2	NO	None	~7
1 Liter	PLASTIC	1	NO	[illegible]	<2
500 ML	PLASTIC	1	NO	[illegible]	>12

Notes: * Flushed lines through cell. Took time to refill
✱ Tubing came off - water [illegible]

RACER0060852

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O'Brien & Gere Engineers, Inc.
Low Flow Ground Water Sampling Log

Date	11/9/99	Personnel	KWB, CPO, PGB	Weather	Cloudy 35°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	W-11D
Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 23.80 ft.
Depth to Water * 6.75 ft.
Length of Water Column 17.05 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
105	8.03	13.24	7.47	1.32	-124	0.40	30.5	300
110	8.49	13.43	7.48	1.32	-126	0.36	58.4	440
115	9.37	13.48	7.52	1.31	-129	0.33	57.3	440
120	9.85	13.48	7.52	1.30	-132	0.35	54.7	440
125	8.97	13.27	7.47	1.32	-127	0.41	35.9	180
130	8.61	13.23	7.46	1.32	-125	0.40	35.7	180
135	8.50	13.21	7.46	1.31	-124	0.40	25.1	200
140	8.50	13.19	7.46	1.31	-124	0.40	20.5	200
145	8.50	13.15	7.46	1.32	-125	0.39	19.6	200
150	8.50	13.21	7.45	1.32	-126	0.40	18.8	200

Water sample:

Time collected: 1515

Total volume of purged water removed: ~5800 mL

Physical appearance at start
Color brown, cloudy
Odor Sulfur
Sheen/Free Product None

Physical appearance at sampling
Color Colorless
Odor Sulfur
Sheen/Free Product None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA-VIAL	3	No	None	~7
1 L [illegible]	[illegible]	2	No	None	~7
1 L [illegible]	Poly	1	No	[illegible]	<2
500 ml	Poly	1	No	NaOH	>12

Notes:

RACER0060853 Page 2 of 2

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	11/ 9 /99	Personnel	KirB, PGB, CPO	Weather	Sunny, 60°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	OBG-2
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * — ft.

Depth to Water * 6.24 ft.

Length of Water Column — ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1120)	9.11							100
5	9.56	15.36	6.34	0.51	-51	2.6	175.0	100
10	9.66	15.17	6.34	0.51	-57	1.5	161.0	100
15	9.80	14.98	6.35	0.51	-51	1.3	159.0	100
20	9.96	14.82	6.36	0.51	-57	1.2	145.0	100
25	10.05	14.83	6.38	0.51	-65	1.0	137.0	100
35*	10.36	15.01	6.41	0.51	-71	2.1	121.0	100
40	10.48	15.07	6.42	0.51	-80	1.1	116.0	100
*								
80 #								
11/10/99 -	9.27	Sample at	0830					
		14.42	6.25	0.42	141	10.8	4.2	

Water sample:

Time collected: 0830 - 11/10/99

Total volume of purged water removed: ~800 ml

Physical appearance at start
Color: gray-cloudy
Odor: No
Sheen/Free Product: No

Physical appearance at sampling
Color: clear
Odor: No
Sheen/Free Product: No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	NO	None	~7
1L [illegible]	Amber [illegible]	2	NO	None	~7
1L [illegible]	Poly	1	NO	Nitric Acid	<2
500 ml	Poly	1	NO	NaOH	>12

Notes: * Flushed flow through cell. Took time to refill.
well went dry

RACER0060854

O'Brien & Gere Engineers, Inc.		**Low Flow Ground Water Sampling Log**
Date 11/9/99	Personnel KWB, CPO	Weather sunny 50°
Site Name GM - Former IFG Facility	Evacuation Method peristaltic pump	Well # OBG 3
Site Location Syracuse, NY	Sampling Method peristaltic pump	Project # 21535

Well information:

Depth of Well * 12.74 ft.
Depth to Water * 10.09 ft.
Length of Water Column 2.65 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(0840)	10.09	—	—	—	—	—	—	100
5	12.51	15.12	6.51	.43	-36	1.6	66.2	100
*								
11/10/99 - 0800 hrs		—	—	—	—	—	3.5 ntu	75 mL

Water sample:

Time collected: 11/10/99 - 0800

Total volume of purged water removed: ~200 mL

Physical appearance at start Turbidity = 3.5
Color gray
Odor No
Sheen/Free Product No

Physical appearance at sampling
Color Colorless
Odor No
Sheen/Free Product No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	Voa-Vial	3	No	None	~7
1 Liter	Amber [illegible]	2	No	None	~7
1 Liter	Poly	1	No	Nitric [illegible]	<2
500 mL	Poly	1	No	NaOH	>12

Notes: * Pumped well dry. Turned off pump to allow recovery
— [illegible] attempt [illegible]

RACER0060855

jam:ers/div76/admin/4_notes/micrlog3

April 25, 1997

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	11/ 9 /99	Personnel	KuB, CPO	Weather	sunny, 50°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	OBG-3D
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * — ft.

Depth to Water * 2.82 ft.

Length of Water Column — ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (0940)	2.82							
5	4.81	11.68	6.65	0.38	41	0.8	43.9	200
10	5.19	11.66	6.76	0.38	2	0.8	32.9	200
15	5.50	11.60	6.82	0.38	-20	0.9	27.9	200
20	5.79	11.60	6.85	0.38	-35	0.9	29.9	200
25	6.04	11.57	6.87	0.38	-43	0.7	25.2	200
30	6.33	11.57	6.88	0.38	-50	0.8	32.4	200
35	6.58	11.51	6.88	0.38	-54	0.6	30.7	200
40	6.76	11.57	6.88	0.38	-58	0.5	30.0	200
45	6.94	11.54	6.89	0.38	-61	0.4	28.0	200
50	7.10	11.65	6.89	0.38	-64	0.4	33.6	200
55	7.25	11.78	6.89	0.38	-66	0.3	32.7	200
60	7.33	11.80	6.89	0.38	-67	0.3	30.6	200
65	7.47	11.87	6.90	0.38	-69	0.3	31.2	200
70	7.62	11.91	6.90	0.38	-72	0.3	29.9	230
75	7.42	11.88	6.89	0.39	-72	0.3	30.5	100
80	7.28	12.12	6.89	0.38	-74	0.3	31.0	190
85	7.30	12.21	6.88	0.39	-76	0.3	29.8	190
90	7.29	12.23	6.89	0.39	-77	0.3	34.9	190
95	7.29	12.50	6.89	0.39	-78	0.3	36.8	190

Water sample:

Time collected: 1030

Total volume of purged water removed: ~4200 ML

Physical appearance at start
Color clear
Odor —
Sheen/Free Product

Physical appearance at sampling
Color clear
Odor —
Sheen/Free Product

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA-Vial	3	NO	HCl	<2
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 ml	Poly	1	NO	NaOH	>12

Notes:

RACER0060856

O'Brien & Gere Engineers, Inc.			Low Flow Ground Water Sampling Log
Date	11/ 9 /99	Personnel	KWB, PGB, CPO
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump
Site Location	Syracuse, NY	Sampling Method	peristaltic pump

Weather: cloudy, 60°
Well #: OBG-5
Project #: 21535

Well information:

Depth of Well *: 12.20 ft.
Depth to Water *: 9.87 ft.
Length of Water Column: 2.33 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1310)	9.87							75
5	10.64	14.83	6.26	0.31	-61	4.1	158	75
10	11.16	14.61	6.32	0.30	-61	1.9	97.9	75
15	11.22	14.49	6.32	0.31	-62	1.7	82.3	75
20	11.41	14.33	6.31	0.30	-63	1.7	23.8	75
25	11.70	14.30	6.30	0.30	-62	1.3	1.0	75
30 *	11.88							
11/10/99 - 0940	9.91						44.3	75

Water sample:

Time collected: 11/10/99 - 0940
Total volume of purged water removed: 525 ML

Physical appearance at start
Color: clear
Odor: —
Sheen/Free Product: NO

Physical appearance at sampling
Color: clear
Odor: —
Sheen/Free Product: NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ML	VOA-VIAL	3	NO	None	~7
1 Liter	Amber Glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 ML	Poly	1	NO	NaOH	>12

Notes: * Well pumped dry

RACER0060857

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date: 11/3/99
Site Name: Former IFG Facility
Site Location: Syracuse, NY

Personnel: KWB CPO, PGB
Evacuation Method: Peristaltic pump
Sampling Method: Peristaltic Pump

Weather: cloudy 40° windy
Well #: ODG-6S
Project #: 21535

Well information:

Depth of Well *: 17.06 ft.
Depth to Water *: 5.42 ft.
Length of Water Column: 11.64 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

CPO

Water parameters:

Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time		Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (0900)		5.42							
5		5.44	12.84	7.20	1.13	0	2.0	>1000	300
10		5.45	13.06	7.18	1.15	-14	0.9	553	300
[illegible]		5.45	13.20	7.17	1.15	-16	0.8	150	325
20		5.44	13.13	7.17	1.15	-16	0.7	37.1	325
25		5.45	13.13	7.17	1.16	-19	0.6	14.7	325
30		5.45	13.42	7.17	1.17	-16	0.6	7.9	[illegible]
35		5.45	13.34	7.17	1.16	-19	0.7	4.5	[illegible]
40		[illegible]	13.34	7.17	1.16	-17	0.6	1.0	320
[illegible]		5.45	13.31	7.16	1.12	-16	0.5	1.0	320
[illegible]		5.45	13.30	7.17	1.16	-16	0.5	1.0	320

Water sample:

Time collected: 1010

Physical appearance at start
Color: cloudy
Odor: —
Sheen/Free Product: No

Total volume of purged water removed: ~3200 mL

Physical appearance at sampling
Color: clear
Odor: —
Sheen/Free Product: No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA - Vial	3	No	None	~7
1 Liter	Amber - Glass	2	No	None	~7
1 L	Poly	1	No	Nitric	<2
500 mL	Poly	1	No	NaOH	>12

Notes:

RACER0060858

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date: 11/3/99
Site Name: Former IFG Facility
Site Location: Syracuse, NY

Personnel: KWB, CPO, PGB
Evacuation Method: Peristaltic
Sampling Method: Peristaltic

Weather: Cloudy, 40° Windy
Well #: OBG-6D
Project #: 21535

Well information:

Depth of Well *: 36.13 ft.
Depth to Water *: 5.52 ft.
Length of Water Column: 30.61 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

PGB

Water parameters:

Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time		Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (0920)		5.52							
5		5.54	11.34	6.61	1.32	230	0	>1000	220
10		5.56	11.58	6.91	1.29	139	0	711	220
15		5.57	11.79	7.01	1.27	27	0	362	230
20		5.57	11.76	7.06	1.26	-29	0	281	230
25		5.57	11.92	7.10	1.26	-29	0	217	230
30		5.57	12.06	7.16	1.25	-32	0	49	230
35		5.57	12.02	7.15	1.25	-47	0	34	230
40		5.57	12.13	7.17	1.25	[illegible]	0	23.5	233
45		5.57	12.21	7.16	1.24	-66	0	15.4	230
50		5.57	12.03	7.15	1.25	-71	0	10.7	230
55		5.57	11.70	7.16	1.25	-74	0	23.3	230
60		5.57	11.58	7.16	1.25	-75	0	35.3	230
65		5.57	11.51	7.16	1.24	-76	0	38.0	220
70		5.57	11.77	7.20	1.23	-79	0	22.4	200
75		5.57	11.90	7.18	1.23	-80	0	13.0	220
80		[illegible]	11.62	7.21	1.24	-82	0	1.0	220
85		5.57	11.74	7.27	1.23	-83	0	1.0	220
90		5.57	12.22	7.20	1.24	-84	0	1.0	220

Water sample:

Time collected: 1050

Total volume of purged water removed: ~4200 mL

Physical appearance at start
Color: GRAY
Odor: NO
Sheen/Free Product: NO

Physical appearance at sampling
Color: clear
Odor: —
Sheen/Free Product:

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-vial	3	NO	None	~7
1 liter	Amber-glass	2	NO	None	~7
1 liter	Poly	1	NO	Nitric Acid	<2
500 mL	Poly	1	NO	NaOH	>12

Notes:

RACER0060859

April 25, 1997

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date	11/09/99	Personnel	CPO, PGB, KWB	Weather	Partly Sunny ~60°F
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	OBG-7D
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 12.25 ft.

Depth to Water * 8.86 ft.

Length of Water Column 3.39 ft.

* Measurements taken from

- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1135 hr)	9.59	16.44	6.77	2.22	-45	1.88	117.0	125
5	9.72	16.03	6.76	2.20	-36	1.28	70.1	125
10	9.85	15.62	6.75	2.18	-29	1.05	57.6	125
15								
20								
25	10.29	15.73	6.75	2.17	-34	0.73	53.4	125
30		FLUSH	CYLINDER		-			
35	10.51	14.88	6.76	2.13	-47	2.09	1.21	125
40	10.66	14.86	6.77	2.14	-47	1.10	0.19	125
45	10.69	15.13	6.77	2.14	-45	0.87	0.1	125
50	10.81	15.36	6.77	2.14	-46	0.86	0.2	100
55	10.86	15.76	6.77	2.15	-47	0.94	0.1	100
60	10.88	15.86	6.78	2.15	-48	0.87	0.7	100
65	10.88	15.85	6.78	2.14	-48	0.81	0.5	100
70	10.88	15.83	6.77	2.15	-47	0.83	0.1	100

Water sample:

Time collected: 1310

Total volume of purged water removed: 1175 ML

Physical appearance at start
Color ORANGE
Odor NO
Sheen/Free Product None

Physical appearance at sampling
Color Colorless
Odor NO
Sheen/Free Product None

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ML	VOA-VIAL	3	NO	None	~7
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 mL	Poly	1	NO	Na OH	>12

Notes:

RACER0060860

O'Brien & Gere Engineers, Inc. — **Low Flow Ground Water Sampling Log**

Date	11/ 4 /99	Personnel	KWB, CPO, PGB	Weather	Sunny, 45°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	OBG-7S
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 18.78 ft.

Depth to Water * 8.64 ft.

Length of Water Column 10.14 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

PGB

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1315)	8.64							125
5	9.15	13.0	6.81	0.15	-15	4.9	93.5	125
10	8.99	12.5	6.75	0.15	-37	2.6	131	125
15	9.06	12.2	6.75	0.15	-44	2.2	124	125
20 *	9.06	12.2	6.74	0.15	-47	2.1	122	125
30	9.14	12.2	6.75	0.14	-48	3.2	43.7	125
35	9.14	12.4	6.77	0.14	-52	2.0	44	125
40	9.17	12.6	6.78	0.14	-56	1.5	98.9	125
45 *	9.19	12.6	6.76	0.14	-57	1.6	107	125
~~0~~ 60 * #	9.49	13.1	6.50	0.15	-34	1.8	1.0	125
65 ~~80~~	9.53	13.3	6.55	0.15	-59	0.9	1.1	125
70	9.47	13.0	6.59	0.15	-69	0.8	1.0	100

Water sample:

Time collected: 1530

Total volume of purged water removed: ~1475 mL

Physical appearance at start
Color Cloudy-Brown/grey
Odor No
Sheen/Free Product No

Physical appearance at sampling
Color Colorless
Odor No
Sheen/Free Product No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ML	VOA-VIAL	3	NO	None	~7
1 LITER	Amber	2	NO	None	~7
1 LITER	Poly	1	NO	Nitric Acid	<2
500 ML	Poly	1	NO	NaOH	>12

Notes: * Emptied flow through cell, took time to refill
\# recalibrated meter

RACER0060861

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date: 11/ 4/99 | Personnel: [illegible] | Weather: Sunny 45°
Site Name: GM - Former IFG Facility | Evacuation Method: peristaltic pump | Well #: OBG-70
Site Location: Syracuse, NY | Sampling Method: peristaltic pump | Project #: 21535

Well information:

Depth of Well *: 36.50 ft.
Depth to Water *: 9.46 ft.
Length of Water Column: 27.04 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

CPS

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1315)	9.46							
5	11.66	11.95	7.38	1.57	39	2.9	482	150
10	12.55	11.80	7.37	1.57	35	2.2	428	150
20 *	13.22	11.82	7.39	1.56	39	4.0	92.1	150
25	15.56	11.70	7.37	1.56	37	2.6	95.8	150
30	13.91	11.71	7.37	1.56	55	2.1	86.3	150
40 *	14.13	11.58	7.37	1.53	53	2.5	48.8	150
45	14.21	11.55	7.37	1.53	32	2.0	48.5	100
50	14.29	11.48	7.37	1.54	30	1.7	45.5	100
55	14.36	11.38	7.36	1.52	26	1.7	44.9	100
60	14.51	11.38	7.36	1.55	21	1.7	35.7	100
65	14.55	11.39	7.36	1.51	18	1.6	38.5	100
70	14.62	11.38	7.35	1.50	13	1.5	35.6	100
75	14.59	11.32	7.35	1.49	10	1.5	29.7	100
80	14.56	11.18	7.35	1.49	6	1.4	27.5	100
85	14.52	11.11	7.35	1.48	1	1.5	19.5	100
90	14.48	11.15	7.35	1.47	-1	1.5	18.0	100

Water sample:

Time collected: 1510

Total volume of purged water removed: ~2,000 ml

Physical appearance at start
Color: grey, cloudy
Odor: No
Sheen/Free Product: No

Physical appearance at sampling
Color: [illegible]
Odor: No
Sheen/Free Product: No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA-Vial	3	No	None	~7
	[illegible]	2	No	[illegible]	~7
	[illegible]	1	No	Nitric Acid	<2
	[illegible]	1	No	NaOH	7/0

Notes: * Emptied flow through cell. Took time to refill

RACER0060862

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date: 11/2/99

Site Name: Former IFG Facility

Site Location: Syracuse, NY

Personnel: [illegible]

Weather: [illegible]

Evacuation Method: Peristaltic pump

Well #: OBG-[illegible]

Sampling Method: Peristaltic pump

Project #: 21535

Well information:

Depth of Well *: 18.52 ft.

Depth to Water *: 6.72 ft.

Length of Water Column: 11.80 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters:

Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time		Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0		[illegible]							
[illegible]		8.87	14.08	6.94	1.34	-4[illegible]	2.2	6.2	[illegible]
[illegible]		8.80	14.12	[illegible]	[illegible]	-5[illegible]	[illegible]	51	[illegible]
10		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20		[illegible]	[illegible]	[illegible]	1.34	-62	1.5	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]		[illegible]		[illegible]	61	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	300
35		[illegible]	[illegible]	[illegible]	[illegible]	-50	[illegible]	52	300
40		8.71	[illegible]	6.90	[illegible]	-69	[illegible]	50.6	300
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	300
		8.71	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	300
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	300
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	300
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]				

Water sample:

Time collected: 11:40

Total volume of purged water removed: ~4100 mL

Physical appearance at start
Color: clear
Odor: NO
Sheen/Free Product: NO

Physical appearance at sampling
Color: [illegible]
Odor: No
Sheen/Free Product: No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	No	None	<7
1 Liter	Amber glass	2	No	None	<7
1 Liter	Poly	1	No	Nitric Acid	<2
500 mL	Poly	1	No	NaOH	>12

Notes:

RACER0060863

April 25, 1997

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date: [illegible]/99
Site Name: Former IFG Facility
Site Location: Syracuse, NY

Personnel: Keith / PO PGB
Evacuation Method: Peristaltic pump
Sampling Method: Peristaltic pump

Weather: Cloudy, windy ~60°F
Well #: [illegible]
Project #: 21535

Well information:

Depth of Well *: 31.57 ft.
Depth to Water *: 7.47 ft.
Length of Water Column: 24.10 ft.

* Measurements taken from

- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters:

Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time		Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
									215
0		7.47							
5		[illegible]	12.71	6.84	1.28	190	0	33.6	215
10		[illegible]	[illegible]	7.05	1.24	30	0	[illegible]	[illegible]
15		[illegible]	[illegible]	[illegible]	1.21	98	0	[illegible]	[illegible]
20		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	[illegible]	225
25		[illegible]	12.35	7.17	1.17	21	0	21.0	
[illegible]		[illegible]			[illegible]			[illegible]	
[illegible]		[illegible]	12.20	7.20	1.15	-17	0	[illegible]	
[illegible]		[illegible]	12.25	7.21	1.15	-29	0	9.6	250
[illegible]		7.57	12.22	7.22	1.15	-36	0	7.5	250

Water sample:

Time collected: [illegible]

Physical appearance at start
Color: Colorless
Odor: No
Sheen/Free Product: No

Total volume of purged water removed: ~2350 mL

Physical appearance at sampling
Color: Colorless
Odor: No
Sheen/Free Product: No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40ML	VOA-VIAL	3	No	None	~7
1 Liter	Amber glass	2	No	None	~7
1 Liter	Poly	1	No	Nitric Acid	<2
500 ml	Poly	1	No	NaOH	>12

Notes:

O'Brien & Gere Engineers, Inc. **Low Flow Ground Water Sampling Log**

Date	11/2/99	Personnel	KWB, CPO, PGB	Weather	Cloudy, windy ~60°F
Site Name	Former IFG Facility	Evacuation Method	Pump	Well #	OBG-95
Site Location	Syracuse, NY	Sampling Method	Peristaltic pump	Project #	21535

Well information:

Depth of Well *	17.83	ft.
Depth to Water *	7.45	ft.
Length of Water Column	10.38	ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

PSG

Water parameters:

Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time		Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1510)		7.45							175
5		7.97	15.07	6.70	1.7	5.0	1.31	181	175
10		8.07	14.98	6.82	1.7	-31	0	143	220
15		[illegible].24	14.99	6.86	1.63	-40	0	[illegible]	220
20		8.14	14.96	6.88	1.60	-44	0	45.4	150
25		9.12	14.98	6.88	1.59	-55	0	[illegible]	150
30		9.12	[illegible]	[illegible]	[illegible]	-65	0	[illegible]	[illegible]
35		9.12	14.91	[illegible]	[illegible]	-75	0	[illegible]	150
40		9.12	14.89	6.89	1.62	-82	0	5.1	150
45		9.12	14.85	[illegible]	1.62	-80	0	4.2	150
[illegible]		9.12	14.80	[illegible]	[illegible]	-73	0	[illegible]	150
[illegible]		9.12	14.85	[illegible]	[illegible]	[illegible]	0	[illegible]	

Water sample:

Time collected: [illegible]

Total volume of purged water removed: [illegible]

Physical appearance at start

Color ~~[illegible]~~ cloudy

Odor —

Sheen/Free Product NO

Physical appearance at sampling

Color clear

Odor —

Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-VIAL	3	NO	None	~7
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric acid	<2
500 mL	Poly	1	NO	NaOH	>12

Notes:

RACER0060865

April 25, 1997

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date: 11/2/99
Site Name: Former IFG Facility
Site Location: Syracuse, NY

Personnel: KWB, CPO, PGB
Evacuation Method: Peristaltic pump
Sampling Method: Peristaltic Pump

Weather: Cloudy, [illegible]
Well #: OBG-9D
Project #: 21535

Well information:

Depth of Well *: 31.55 ft.
Depth to Water *: 7.30 ft.
Length of Water Column: 24.16 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

CPO

Water parameters:

Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time		Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
									325
0 (1310)		7.39							325
5		7.88	13.34	7.34	1.33	21	4.7	150	325
10		8.02	13.16	7.25	1.34	-23	4.0	122	400
15		8.09	13.07	7.22	1.33	-51	2.9	164	350
20		8.05	13.08	7.19	1.31	-65	1.5	85.2	350
25		8.07	13.06	7.19	1.31	-71	1.2	68.2	350
30		8.08	13.02	7.19	1.30	-74	1.0	50	350
35		8.08	13.01	7.19	1.30	-75	0.9	48.2	350
40		8.08	12.98	7.18	1.30	-77	0.9	9.6	350
45		8.08	12.94	7.18	1.30	-78	0.9	6.0	350
50		8.09	12.92	7.18	1.30	-79	0.8	2.5	350
55		8.09	[illegible]	[illegible]	1.29	-79	0.8	2.4	350
60		8.07	[illegible]	7.18	1.29	-80	0.4	2.2	350
[illegible]		[illegible]	[illegible]	7.18	[illegible]	-80	[illegible]	[illegible]	350

Water sample:

Time collected: [illegible]

Physical appearance at start
Color: [illegible]
Odor: NO
Sheen/Free Product: NO

Total volume of purged water removed: ~4900 ml

Physical appearance at sampling
Color: Colorless
Odor: NO
Sheen/Free Product: NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ML	VOA-VIAL	3	NO	NONE	~7
1 Liter	Amber glass	2	NO	NONE	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 ml	Poly	1	NO	NaOH	>12

Notes:

RACER0060866

O'Brien & Gere Engineers, Inc. — **Low Flow Ground Water Sampling Log**

Date	11/ 7 /99	Personnel	KWB, CPO, PGB	Weather	cloudy, 32°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	OBG-U-103
Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 13.66 ft.

Depth to Water * 5.21 ft.

Length of Water Column 8.45 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

CPO

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (0815)	5.21							
5	5.79	13.56	6.86	1.41	191	4.46	2.7	150
10	5.96	13.92	6.90	1.39	179	3.55	1.5	150
15	6.06	14.13	6.89	1.39	167	3.34	0.9	150
20	6.11	14.01	6.87	1.40	134	3.34	0.1	140
25	6.16	13.85	6.87	1.41	107	2.75	0.1	140
30	6.21	13.87	6.87	1.41	98	2.83	0.1	140
35	6.22	13.74	6.87	1.41	78	2.39	0.1	100
40	6.23	13.68	6.87	1.41	74	2.24	0.1	100
45	6.23	13.64	6.86	1.41	71	2.19	0.1	100
50	6.23	13.52	6.86	1.41	68	1.98	0.1	100

Water sample:

Time collected: 0930

Total volume of purged water removed: ~1400 mL

Physical appearance at start
Color: clear
Odor: No
Sheen/Free Product: No

Physical appearance at sampling
Color: clear
Odor: NO
Sheen/Free Product: NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA Vial	3	NO	None	~7
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 mL	Poly	1	NO	NaOH	>12

Notes:

RACER0060867

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date	11/ 3 /99	Personnel	KWB - PO [illegible]	Weather	[illegible]
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	[illegible] OD
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 29.09 ft.

Depth to Water * 5.62 ft.

Length of Water Column 23.47 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing PGB
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(0845)	5.62							
5	5.74	13.79	6.58	0.11	348	4.7	66	180
10	5.75	13.87	7.06	0.10	323	2.5	55	180
15	5.76	13.91	7.16	0.10	299	1.9	44.2	180
20	5.76	14.02	7.19	0.11	276	1.7	39.5	180
25	5.77	14.02	7.19	0.11	234	1.4	33.2	180
35 *	5.77	14.07	7.21	0.11	83	1.5	12.3	180
40	5.77	14.05	7.20	0.11	33	1.6	9.7	180
45	5.78	14.05	7.19	0.11	-9	1.2	7.9	200
50	5.78	14.02	7.21	0.11	-46	0.9	5.7	200
55	5.78	14.06	7.22	0.11	-59	1.1	4.2	200
60	5.78	14.07	7.23	0.11	-67	1.1	3.9	200
65								

Water sample:

Time collected: 0945

Total volume of purged water removed: ~2200 ml

Physical appearance at start

Color: cloudy white

Odor: NO

Sheen/Free Product: NO

Physical appearance at sampling

Color: clear

Odor: NO

Sheen/Free Product: NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ML	VOA-VIAL	3	NO	NONE	~7
1 Liter	Amber [illegible]	2	NO	NONE	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 ML	Poly	1	NO	NaOH	>12

Notes: [illegible]

RACER0060868

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date	11/ 8 /99	Personnel	KinB, PGB, CPO	Weather	Cloudy 35°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	OBG-11
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 18.25 ft.
Depth to Water * 12.72 ft.
Length of Water Column 5.53 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0(1540)	12.72							
5	13.36	14.03	7.25	1.05	63	2.24	492	190
10	13.41	13.93	7.25	1.04	63	1.79	304	110
15	13.45	13.86	7.25	1.04	62	1.35	228	190
20 *	13.41	13.82	7.25	1.04	66	1.08	135	150
30 *	13.42	13.80	7.25	1.04	66	1.01	105.0	150
35	13.43	13.70	7.25	1.03	74	1.28	66.0	150
40	13.44	13.69	7.25	1.03	72	0.92	52.9	130
45	13.39	13.51	7.26	1.03	77	2.48	41.8	130
50	13.39	13.33	7.25	1.04	74	1.85	39.5	130
55	13.39	13.30	7.25	1.03	72	2.20	38.1	130

Water sample:

Time collected: 1645
Total volume of purged water removed: ~1700 ml

Physical appearance at start
Color: Red, cloudy
Odor: NO
Sheen/Free Product: NO

Physical appearance at sampling
Color: clear
Odor: —
Sheen/Free Product: NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA-vial	3	NO	None	~7
1 Liter	Amber glass	2	NO	None	~7
1 Liter	Poly	1	NO	Nitric Acid	<2
500 ml	Poly	1	NO	NaOH	>12

Notes: * Flushed flow through cell. Took time to fill.

RACER0060869

O'Brien & Gere Engineers, Inc. — Low Flow Ground Water Sampling Log

Date	11/03/99	Personnel	CPO/AGB/KWB	Weather	Rain Windy 40°F
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	OBG-12
Site Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 15.54 ft.
Depth to Water * 9.83 ft.
Length of Water Column 5.71 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

500
755

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	10.46	15.3	7.35	0.10	40	1.0	373	250
5	10.53	15.6	7.34	0.10	25	1.3	339	275
10	10.62	15.9	7.33	0.10	8	1.2	343	275
15	10.62	[illegible]	7.32	0.10	-8	0.1	314	250
		EMPTY	Flow Thru Cell					
25	10.60	15.9	7.34	0.11	-20	1.2	127.0	
30	10.62	16.0	7.33	0.10	-32	1.3	115.0	250
36	10.65	15.8	7.35	0.10	-30	2.7	28.5	250
40	10.65	15.9	7.34	0.10	-44	1.2	26.7	250
45	10.65	16.0	7.33	0.10	-51	1.5	25.1	250
50	10.65	15.9	7.32	0.11	-46	1.2	19.4	250
55	10.65	16.0	7.32	0.11	-58	1.2	17.3	250

Water sample:

Time collected: 1600 hrs

Total volume of purged water removed: ~ 2,550 ML

Physical appearance at start
Color gray
Odor No
Sheen/Free Product No

Physical appearance at sampling
Color Colorless
Odor No
Sheen/Free Product No

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA-Vial	3	No	HCl	~7
1 Liter	Amber [illegible]	2	No	None	~7
1 Liter	Poly	1	No	Nitric Acid	<2
500 mL	Poly	1	No	Na OH	>12

Notes:

RACER0060870

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date	11/3 /99	Personnel	KWB, PGB	Weather	cloudy, 40°
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	OBG-13
Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 17.84 ft.
Depth to Water * 9.31 ft.
Length of Water Column 8.53 ft.

* Measurements taken from
- [X] Top of Well Casing
- [ ] Top of Protective Casing
- [ ] (Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1445)	9.31							
5	11.39	14.85	7.0	0.854	71	1.3	188	230
10	11.52	15.28	7.0	1.04	66	1.8	175	200
15	11.90	15.52	7.06	0.856	70	1.04	277	200
20	12.14	15.50	7.03	0.86	75	1.8	331	200
25	12.40	15.30	8.05	1.05	88	2.3	320	150
35 *	12.94	14.40	7.09	1.03	96	1.2	203	100
40	13.02	14.29	7.09	1.05	101	5.7	197	100
45	13.19	14.40	7.03	1.05	101	5.6	167	100
50	13.38	14.41	7.05	1.06	100	5.6	150	100
55 *	13.61	14.09	7.18	1.07	90	5.5	105	100
60	13.84	14.02	7.13	1.07	93	4.5	104	100
65 *	14.00	13.95	7.08	1.07	91	4.2	141	100
70	Well went	Dry.						

Water sample:
Time collected: 11/4-0830 see page 2

Total volume of purged water removed: ~1800 mL

Physical appearance at start
Color: cloudy, brown
Odor: –
Sheen/Free Product: NO

Physical appearance at sampling
Color: — See Page 2
Odor: —
Sheen/Free Product: —

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes: * Flushed out flow through cylinder w/ DI Water
Needed time for cell to fill.
* Per OEC, turned flow Rate to 400

(1 OF 2)

RACER0060871

O'Brien & Gere Engineers, Inc.

Low Flow Ground Water Sampling Log

Date 11/ 4 /99 Personnel KwB, CPO, PGB Weather Cloudy 40°F

Site Name GM - Former IFG Facility Evacuation Method peristaltic pump Well # OBG-13

Site Location Syracuse, NY Sampling Method peristaltic pump Project # 21535

Well information:

Depth of Well * 17.84 ft.

Depth to Water * 9.31 ft.

Length of Water Column 8.53 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (0815)	9.41	10.84	7.36	1.03	91	9.9?	21.1	100
							62.3 ntu	
							in metals	container

Water sample:

Time collected: 0830 (See page 1 For purge infor.)

Total volume of purged water removed: ~1800 mL

Physical appearance at start
Color clear
Odor —
Sheen/Free Product NO

Physical appearance at sampling
Color clear
Odor —
Sheen/Free Product NO

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA-VIAL	3	NO	None	~7
1 Liter	Amber Glass	2	NO	None	~7
1 Liter	Poly	2	1-Yes/1-NO	Nitric Acid	<2
500 ml	Poly	2	1-Yes/1-NO	NaOH	>12

Notes: At time of filling metals bottle turbidity was 62.5 ntu.

RACER0060872

2 of 2

O'Brien & Gere Engineers, Inc. **Low Flow Ground Water Sampling Log**

Date	11/10/99	Personnel	CPO	Weather	OVERCAST, ~55°F
Site Name	GM - Former IFG Facility	Evacuation Method	peristaltic pump	Well #	OBG-15
Location	Syracuse, NY	Sampling Method	peristaltic pump	Project #	21535

Well information:

Depth of Well * 12.74 ft.
Depth to Water * 8.37 ft.
Length of Water Column 4.37 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Water parameters: Lower submersible pump slowly through stagnant water column
Position pump in center of screened interval & maximum pumping rate of 0.5 liters/minute
Collect readings at every three minute intervals

Elapsed Time	Depth To Water	Temperature	pH	Conductivity	Oxidation Reduction Potential	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0 (1100)	9.37	16.28	7.41	63	151	6.4	172.0	150
5	10.04	15.94	7.53	61	154	5.7	422.0	125
10	10.83	15.84	7.58	60	158	5.2	519.0	125
15	11.41	15.99	7.65	59	163	6.8	579.0	125
20	11.86	15.76	7.56	72	166	5.6	~~710.0~~	100
25	12.10	15.79	7.53	73	164	8.5	>1000	100
30	12.30	15.83	7.53	74	163	3.9	>1000	100
35	12.48	15.81	7.47	79	160	3.4	958	100
40	12.61	15.90	7.44	91	31	3.6	>1000	100
	DRY							
0915-11/11/99	8.61	9.41	7.26	47	200	9.5	394.0	100

Water sample:
Time collected: 0915-11/11/99
Total volume of purged water removed: ~1300 mL

Physical appearance at start
Color Brown
Odor NO
Sheen/Free Product NO

Physical appearance at sampling
Color Lt. brown
Odor NO
Sheen/Free Product None

Samples collected:

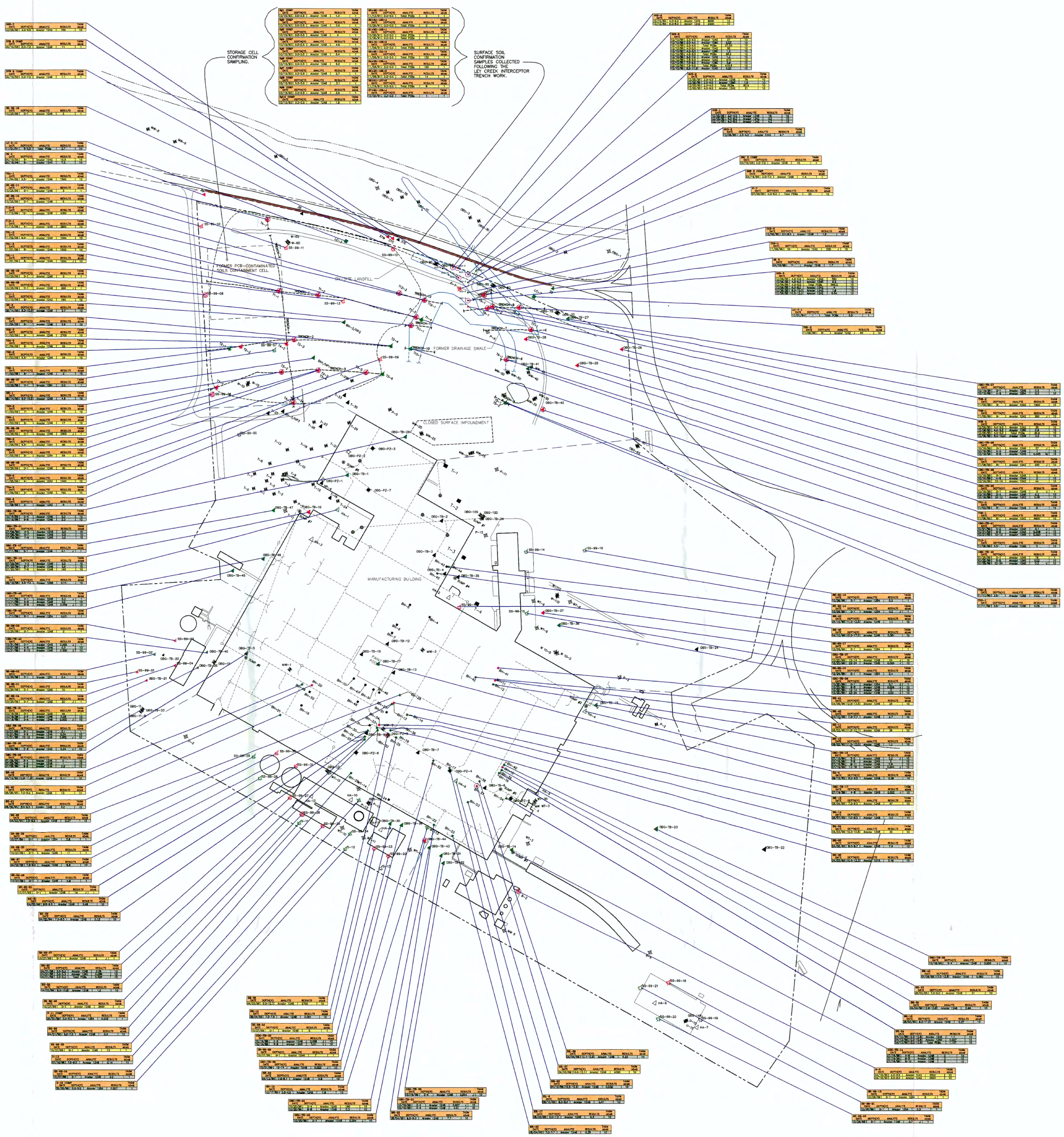
Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VOA VIAL	3	NO	None	~7
1 Liter	Amber glass	3	1-yes/2-NO	None	~7
1 Liter	Poly	2	1-yes/1-NO	Nitric Acid	<2
500 mL	Poly	2	1-yes/1-NO	NaOH	>12

Notes:

RACER0060873

APPENDIX C

1999 Supplemental RI detected concentrations



LEGEND

- SANITARY SEWER
- PROPERTY LINE
- AREA BOUNDARY LINE
- BUILDING
- FORMER DRAINAGE SWALE
- SOIL EXCAVATED DURING THE LEY CREEK RELIEF INTERCEPTOR SEWER PROGRAM

SAMPLE ICONS

- SOIL BORING (CRA)
- SOIL BORING (OBG)
- SURFACE SOIL SAMPLE
- TRENCH SAMPLE
- HAND AUGER SAMPLE LOCATION (CRA)
- OIL/WATER COLLECTION SUMP
- PIEZOMETER
- ABONDON PIEZOMETER
- MONITORING WELL
- MONITORING WELL NOT SAMPLED

SAMPLE ICON COLOR DESIGNATION

- BLACK = ANALYTICAL RESULTS NOT DETECTED
- GREEN = ANALYTICAL RESULTS DETECTED BELOW NY STATE TAGM 4046 SCREENING LEVELS.
- RED = ANALYTICAL RESULTS DETECTED ABOVE NY STATE TAGM 4046 SCREENING LEVELS.
- CONCENTRATION EXCEEDING 50 mg/Kg

DATA BOX SHADING DESIGNATION

- GRAY = ANALYTICAL RESULTS DETECTED BELOW NY STATE TAGM 4046 SCREENING LEVELS.
- YELLOW = ANALYTICAL RESULTS DETECTED ABOVE NY STATE TAGM 4046 SCREENING LEVELS.

NOTE: UNITS = mg/Kg

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THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

IN CHARGE OF ______
DESIGNED BY ______ CHECKED BY ______
DRAWN BY ______

1"=120' 120 0 120 240

NO.	DATE	REVISION	INIT.

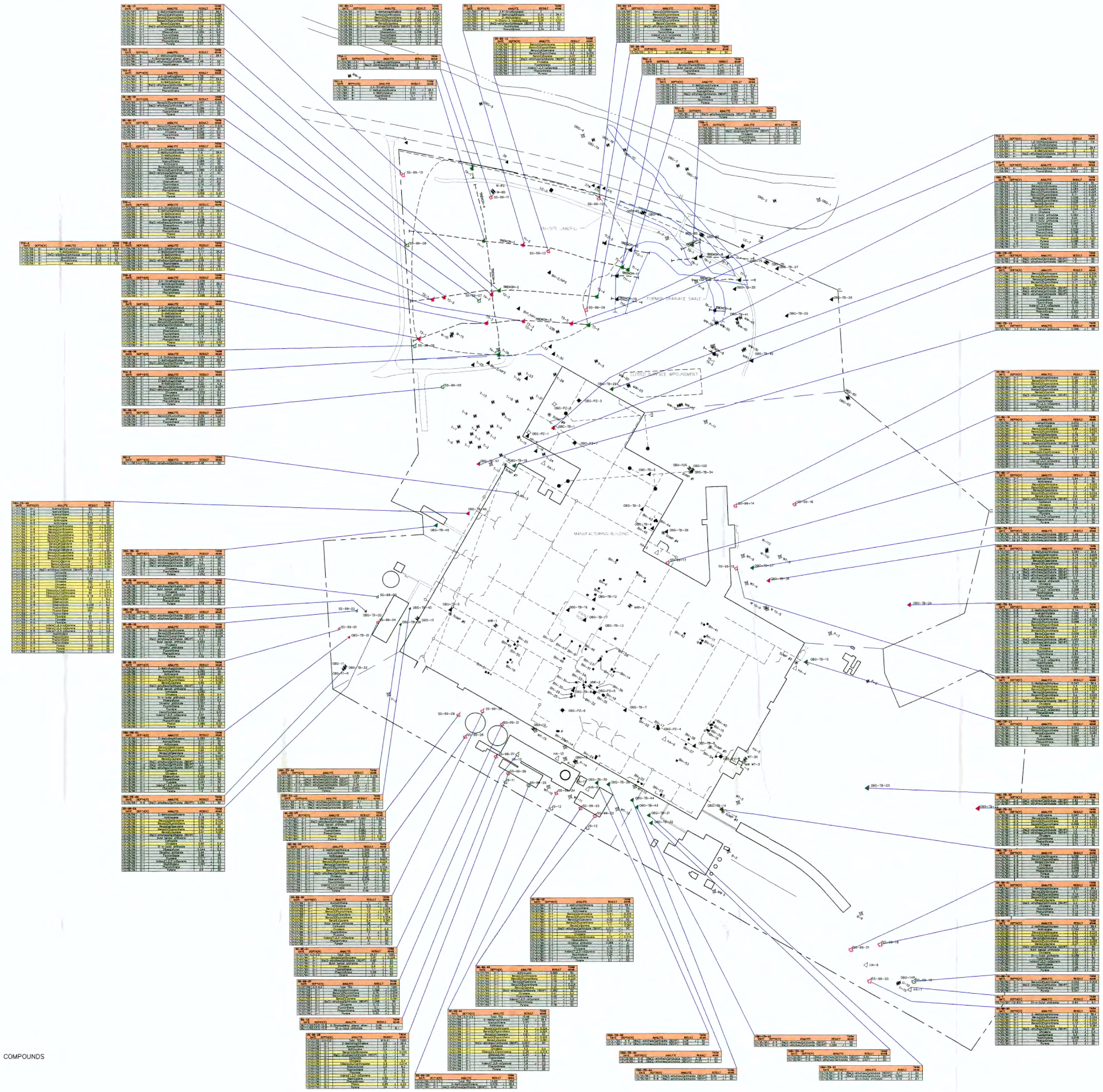
O'BRIEN & GERE ENGINEERS INC.

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

DETECTED SOIL
PCB CONCENTRATIONS

FILE NO. 4966.21535.PCB
DATE April 2000

C–1



LEGEND

- SANITARY SEWER
- PROPERTY LINE
- AREA BOUNDARY LINE
- BUILDING
- FORMER DRAINAGE SWALE

SAMPLE ICONS

- SOIL BORING (CRA)
- SOIL BORING (OBG)
- SURFACE SOIL SAMPLE
- TRENCH SAMPLE
- HAND AUGER SAMPLE LOCATION (CRA)
- OIL/WATER COLLECTION SUMP
- PIEZOMETER
- ABONDON PIEZOMETER
- MONITORING WELL
- MONITORING WELL NOT SAMPLED

SAMPLE ICON COLOR DESIGNATION

- BLACK = ANALYTICAL RESULTS NOT DETECTED
- GREEN = ANALYTICAL RESULTS DETECTED BELOW NY STATE TAGM 4046 SCREENING LEVELS.
- RED = ANALYTICAL RESULTS DETECTED ABOVE NY STATE TAGM 4046 SCREENING LEVELS.

DATA BOX SHADING DESIGNATION

- GRAY = ANALYTICAL RESULTS DETECTED BELOW NY STATE TAGM 4046 SCREENING LEVELS.
- YELLOW = ANALYTICAL RESULTS DETECTED ABOVE NY STATE TAGM 4046 SCREENING LEVELS.

NOTES: UNITS = mg/Kg FOR SEMI-VOLATILE ORGANIC COMPOUNDS
ng/Kg FOR TEQ DATA

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IN CHARGE OF ______ DESIGNED BY ______ CHECKED BY ______ DRAWN BY ______	1"=120' 120 0 120	NO. DATE REVISION INIT.	O'BRIEN & GERE ENGINEERS INC.	GENERAL MOTORS CORP. SYRACUSE, NEW YORK	DETECTED SOIL SVOC & TEQ CONCENTRATIONS	FILE NO. 4966.21535.SVOC DATE April 2000	C–2

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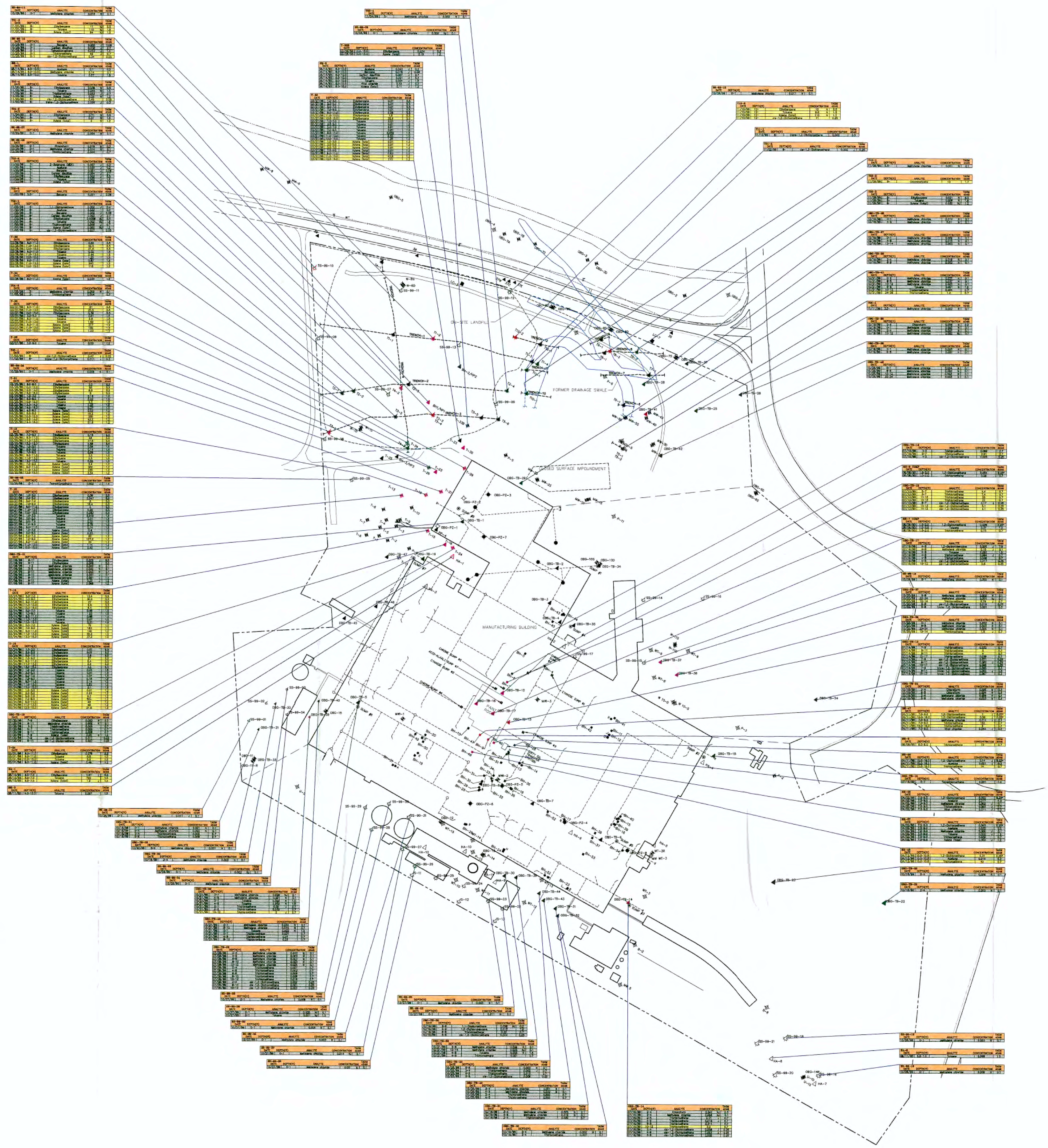
RACER0060877



LEGEND

- SANITARY SEWER
- PROPERTY LINE
- AREA BOUNDARY LINE
- BUILDING
- FORMER DRAINAGE SWALE

SAMPLE ICONS

- SOIL BORING (CRA)
- SOIL BORING (OBG)
- SURFACE SOIL SAMPLE (CRA)
- TRENCH SAMPLE
- HAND AUGER SAMPLE LOCATION (CRA)
- OIL/WATER COLLECTION SUMP
- PIEZOMETER
- ABONDON PIEZOMETER
- MONITORING WELL
- MONITORING WELL NOT SAMPLED

SAMPLE ICON COLOR DESIGNATION

- BLACK = ANALYTICAL RESULTS NOT DETECTED
- GREEN = ANALYTICAL RESULTS DETECTED BELOW NY STATE TAGM 4046 SCREENING LEVELS.
- RED = ANALYTICAL RESULTS DETECTED ABOVE NY STATE TAGM 4046 SCREENING LEVELS.

DATA BOX SHADING DESIGNATION

- GRAY = ANALYTICAL RESULTS DETECTED BELOW NY STATE TAGM 4046 SCREENING LEVELS.
- YELLOW = ANALYTICAL RESULTS DETECTED ABOVE NY STATE TAGM 4046 SCREENING LEVELS.

NOTE: UNITS = mg/Kg

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IN CHARGE OF ______

DESIGNED BY ______ CHECKED BY ______

DRAWN BY ______

1"=120' 120 0 120 240

NO.	DATE	REVISION	INIT.

O'BRIEN & GERE ENGINEERS INC.

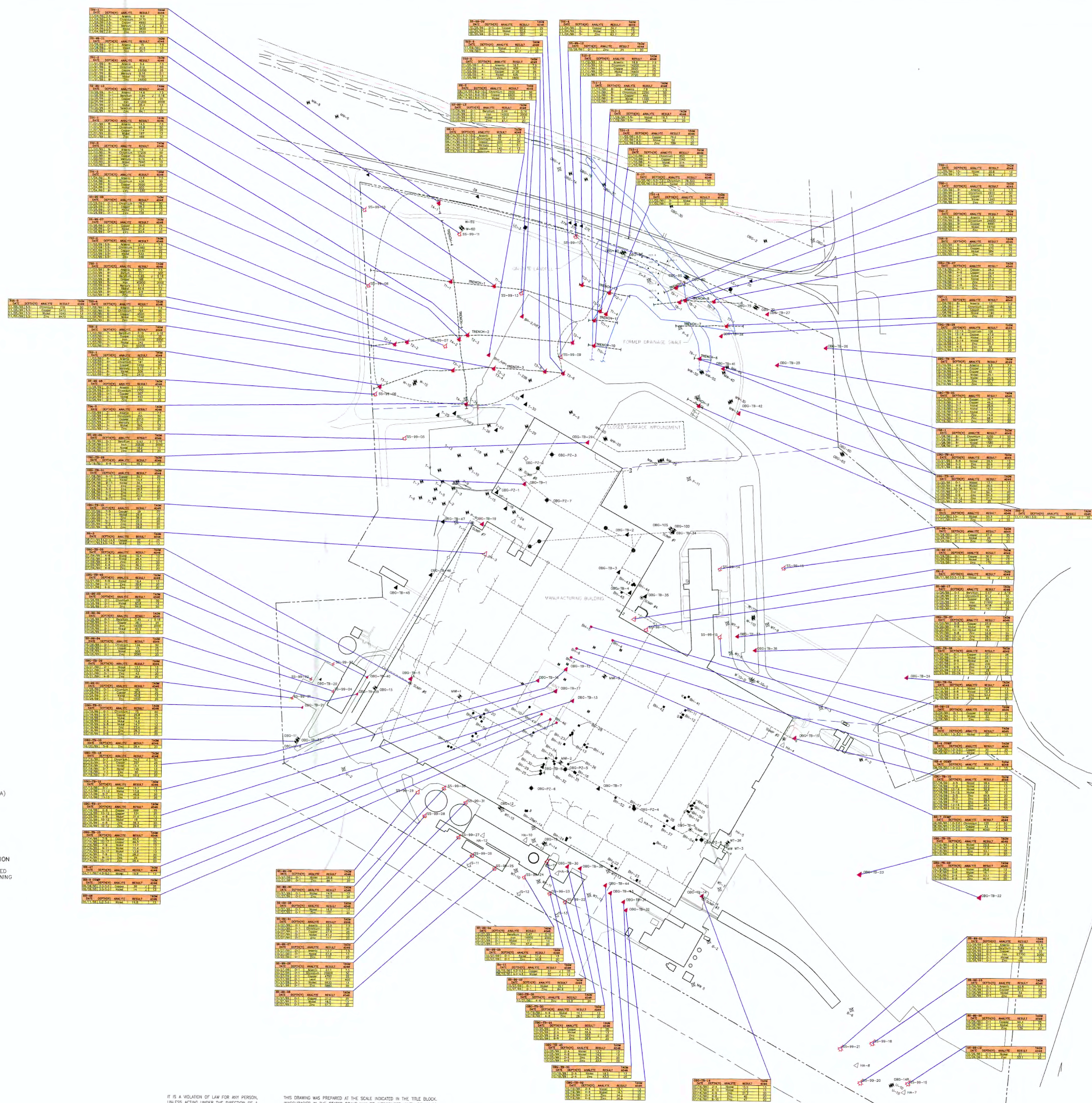
GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

DETECTED SOIL
VOC CONCENTRATIONS

FILE NO. 4966.21535.VOC

DATE APRIL 2000

C-3



LEGEND

- SANITARY SEWER
- PROPERTY LINE
- AREA BOUNDARY LINE
- BUILDING
- FORMER DRAINAGE SWALE

SAMPLE ICONS

- SOIL BORING (CRA)
- SOIL BORING (OBG)
- SURFACE SOIL SAMPLE
- TRENCH SAMPLE
- HAND AUGER SAMPLE LOCATION (CRA)
- OIL/WATER COLLECTION SUMP
- PIEZOMETER
- ABONDON PIEZOMETER
- MONITORING WELL
- MONITORING WELL NOT SAMPLED

SAMPLE ICON COLOR DESIGNATION

RED = ANALYTICAL RESULTS DETECTED ABOVE NY STATE TAGM 4046 SCREENING LEVELS.

NOTE: UNITS = mg/Kg

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IN CHARGE OF
DESIGNED BY CHECKED BY
DRAWN BY

1"=100' 100 0 100

NO.	DATE	REVISION	INIT.

O'BRIEN & GERE ENGINEERS, INC.

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

DETECTED SOIL METAL CONCENTRATIONS ABOVE SCREENING LEVELS

FILE NO. 4966.21535.MET
DATE APRIL 2000

C-4

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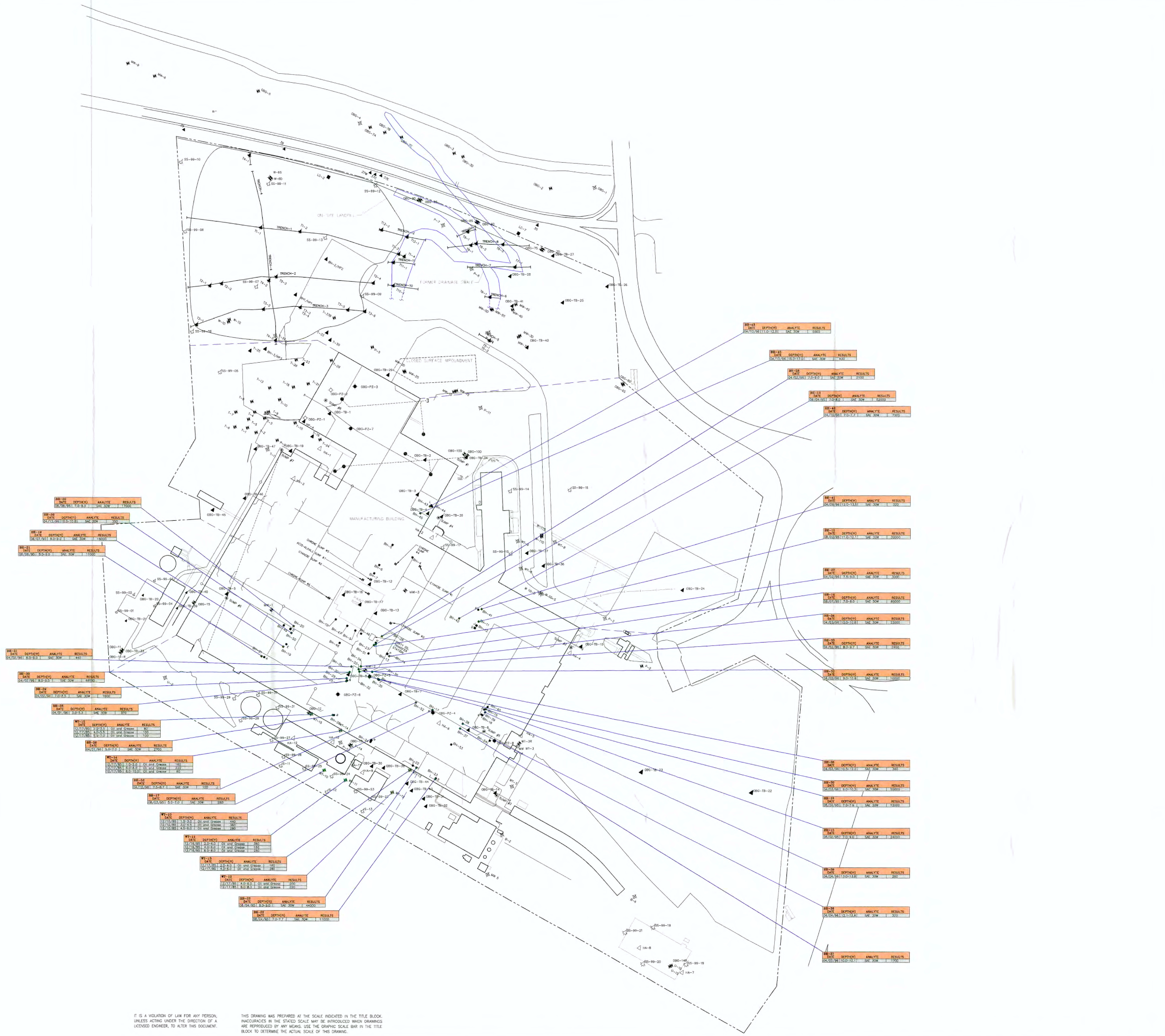
RACER0060879



LEGEND

- SANITARY SEWER
- PROPERTY LINE
- AREA BOUNDARY LINE
- BUILDING
- FORMER DRAINAGE SWALE

SAMPLE ICONS

- SOIL BORING (CRA)
- SOIL BORING (OBG)
- SURFACE SOIL SAMPLE
- TRENCH SAMPLE
- HAND AUGER SAMPLE LOCATION (CRA)
- OIL/WATER COLLECTION SUMP
- PIEZOMETER
- ABONDON PIEZOMETER
- MONITORING WELL
- MONITORING WELL NOT SAMPLED

SAMPLE ICON COLOR DESIGNATION

GREEN = ANALYTICAL RESULTS DETECTED

NOTE: UNITS = mg/Kg

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IN CHARGE OF	DESIGNED BY	CHECKED BY	DRAWN BY

1"=100' 100 0 100

NO.	DATE	REVISION	INIT.

O'BRIEN & GERE ENGINEERS INC.

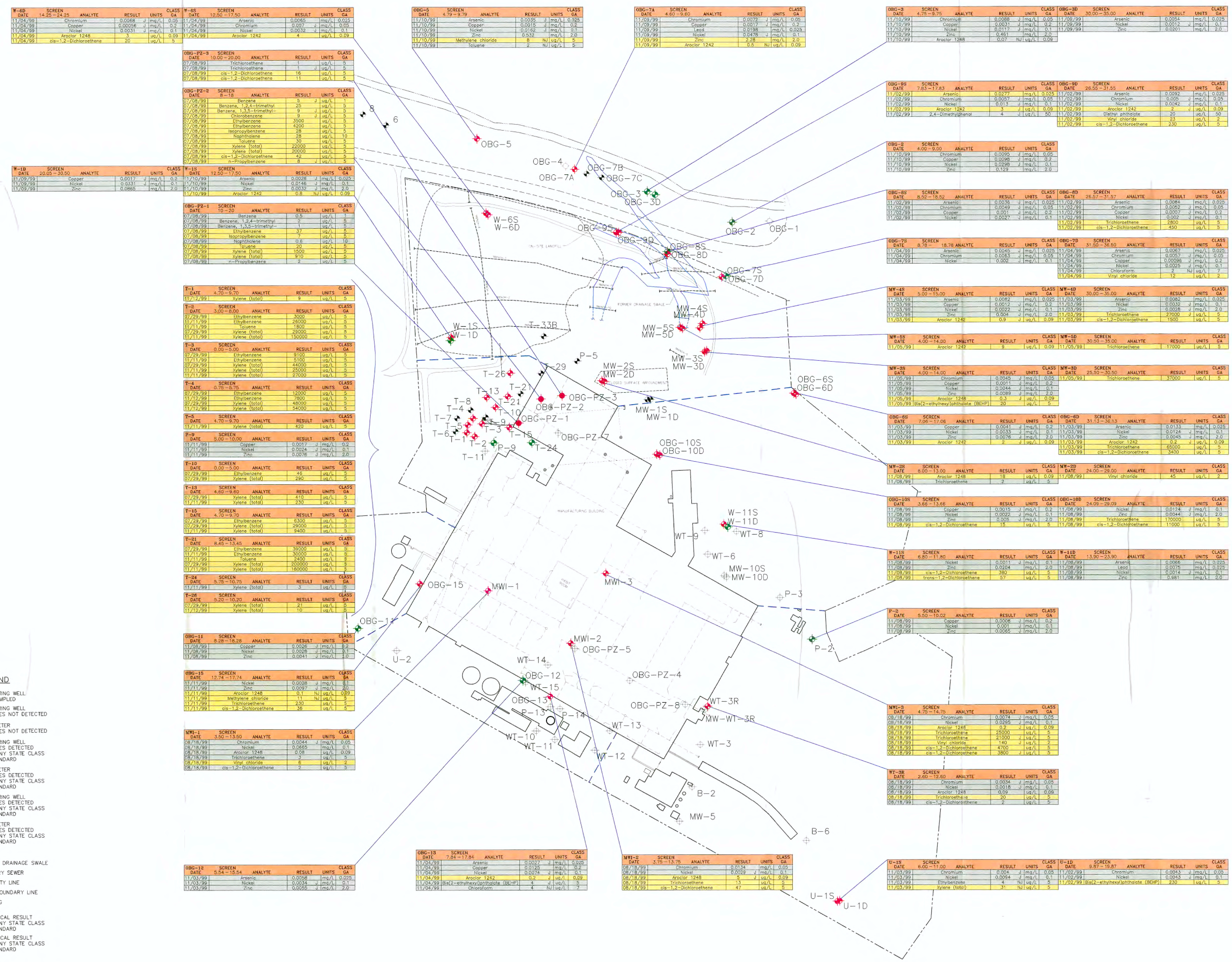
GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

DETECTED SOIL OIL & GREASE, SAE 30W OIL CONCENTRATIONS

FILE NO. 4966.21535.O&G

DATE APRIL 2000

C-5



LEGEND

- MONITORING WELL NOT SAMPLED
- MONITORING WELL ANALYTES NOT DETECTED
- PIEZOMETER ANALYTES NOT DETECTED
- MONITORING WELL ANALYTES DETECTED BELOW NY STATE CLASS GA STANDARD
- PIEZOMETER ANALYTES DETECTED BELOW NY STATE CLASS GA STANDARD
- MONITORING WELL ANALYTES DETECTED ABOVE NY STATE CLASS GA STANDARD
- PIEZOMETER ANALYTES DETECTED ABOVE NY STATE CLASS GA STANDARD
- FORMER DRAINAGE SWALE
- SANITARY SEWER
- PROPERTY LINE
- AREA BOUNDARY LINE
- BUILDING
- ANALYTICAL RESULT BELOW NY STATE CLASS GA STANDARD
- ANALYTICAL RESULT ABOVE NY STATE CLASS GA STANDARD

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IN CHARGE OF
DESIGNED BY CHECKED BY
DRAWN BY

1"=120' 120 0 120 240

NO.	DATE	REVISION	INIT.

O'BRIEN & GERE ENGINEERS INC.

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

GROUND WATER
DETECTED CONCENTRATIONS

FILE NO. 4996.21535.GW
DATE APRIL 2000

C-6

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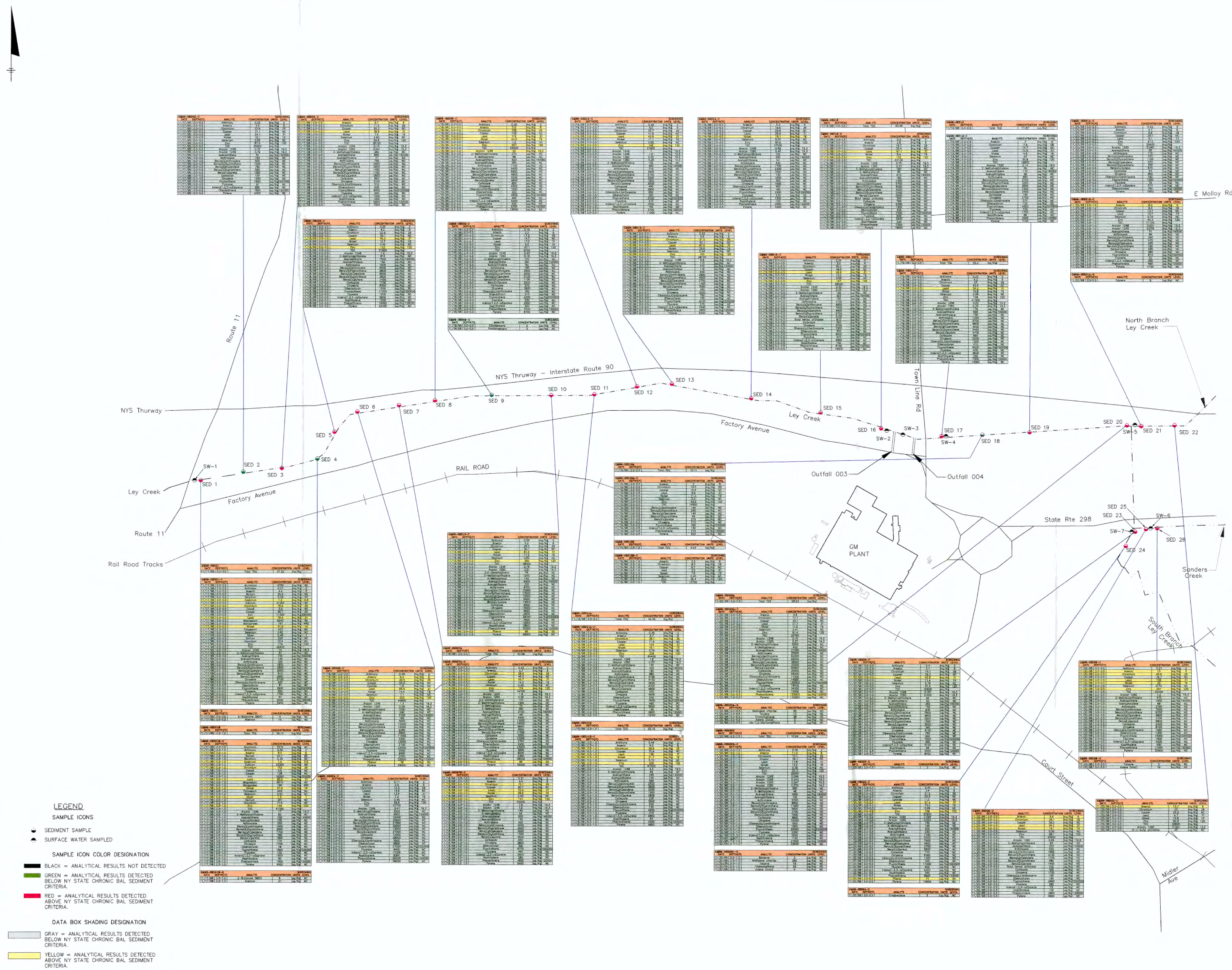
RACER0060881



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IN CHARGE OF	1"=400' (400 0 400)	NO. / DATE / REVISION / INIT.	O'BRIEN & GERE ENGINEERS INC.	GENERAL MOTORS CORP. SYRACUSE, NEW YORK	1998/1999 LEY CREEK SEDIMENT DETECTED CONCENTRATIONS	FILE NO. 4966.21535.SED	C-7
DESIGNED BY ___ CHECKED BY ___						DATE APRIL 2000	
DRAWN BY							

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RACER0060882

1999 Dioxin toxicity equivalence calculations

APPENDIX D

Toxic equivalency factor calculations

Toxic Equivalency Factors (TEFs) were applied to standardize the detected chlorinated dioxins and furans concentrations. 2,3,7,8-tetrachloro-dibenzo-p-dioxin (2,3,7,8-TCDD) is the most widely studied chlorinated dioxin (from a human health perspective), while most of the chlorinated dioxin and furan congeners have not been tested as extensively as 2,3,7,8-TCDD. Available data indicates that some of the congeners may display toxic properties, though they are less potent than 2,3,7,8-TCDD. Therefore, to facilitate the evaluation of mixtures of chlorinated dioxins and furans, a Toxic Equivalency Factor (TEF) approach has been used by regulatory authorities and has been widely accepted and used by the scientific and regulatory communities in many parts of the world. Basically, the TEF approach multiplies the congener specific TEF (relative to 2,3,7,8-TCDD) by the detected concentration to derive the congener specific Toxic Equivalent (TEQ). The sum of the congener specific TEQs constitutes the total sample TCDD TEQ. The sample specific TCDD TEQ is then compared with toxicity data for 2,3,7,8-TCDD.

In order to improve communication and consistency amongst scientists and regulators, an interim set of International-TEFs (I-TEFs) were published in 1988 by the NATO\CCMS Pilot Study on International Information Exchange on Dioxins (USEPA 1989), and recently updated by a World Health Organization (WHO) working group (Van den Berg *et al.* 1998). The updated I-TEFs for mammals were used in this assessment to standardize the observed PCDD/PCDF concentration. This approach facilitates the comparability of the results with data in the open literature. However, it should be recognized that the total toxic equivalents (TEQs) calculated using the TEF approach do not necessarily reflect the actual relative toxic potency of the mixture, due to the simplifications of the TEF approach.

Van den Berg, Martin. et al. 1998. *Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife.* Environmental Health Perspectives. Volume 106, Number 12, December 1998

USEPA 1989, *Interim procedures for estimating risks associated with exposures to mixtures of chlorinated dibenzo-p-dioxins and dibenzofurans (CDDs and CDFs) and 1989 update.*, Risk Assessment Forum, USEPA, Washington D.C., PB90-145756

O'BRIEN & GERE ENGINEERS, INC.

Table
Former IFG Facility
Syracuse, NY
Soil Samples
8290 Dioxins and Furans Toxicity Equivalent Quotient (TEQ) Data

Sample ID Area Sample Date Sample Depth Units	Toxicity Equivalent Factor (TEF)	SS-99-24	SS-99-25	SS-99-26	SS-99-27	SS-99-31
		0.0 - 0.5 ft. 10/27/99 ng/Kg	0.0 - 0.5 ft. 10/27/99 ng/Kg	0.0 - 0.5 ft. 10/27/99 ng/Kg	0.0 - 0.5 ft. 10/27/99 ng/Kg	0.0 - 0.5 ft. 10/27/99 ng/Kg
Compound						
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1	1.00	0.83	2.49	1.00	1.00
2,3,7,8-Tetrachlorodibenzofuran	0.1	0.49	0.84	67.00	0.87	4.35
1,2,3,7,8-Pentachlorodibenzofuran	0.05	0.25	0.21	16.75	0.25	0.30
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.5	2.50	2.10	3.72	2.50	2.50
2,3,4,7,8-Pentachlorodibenzofuran	0.5	2.50	7.40	690.00	2.50	10.20
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1	0.50	0.61	70.00	0.50	1.02
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1	0.50	0.42	22.10	0.50	0.50
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.50	0.42	0.50	0.50	0.50
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.50	0.42	10.20	0.50	0.50
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1	0.50	0.42	3.80	0.50	0.50
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1	0.50	0.42	11.30	0.50	0.50
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1	0.50	0.42	1.64	0.50	0.50
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01	0.05	0.08	6.63	0.07	0.18
1,2,3,4,6,7,8-Heptachlorodibenzop-dioxin	0.01	0.06	0.14	5.71	0.21	0.33
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01	0.05	0.04	1.50	0.05	0.05
Octachlorodibenzo-p-dioxin	0.001	0.05	0.12	1.88	0.19	0.24
Octachlorodibenzofuran	0.001	0.01	0.02	1.19	0.02	2.84
Total TEQ		10.46	14.92	916.41	11.15	26.01

NOTES:

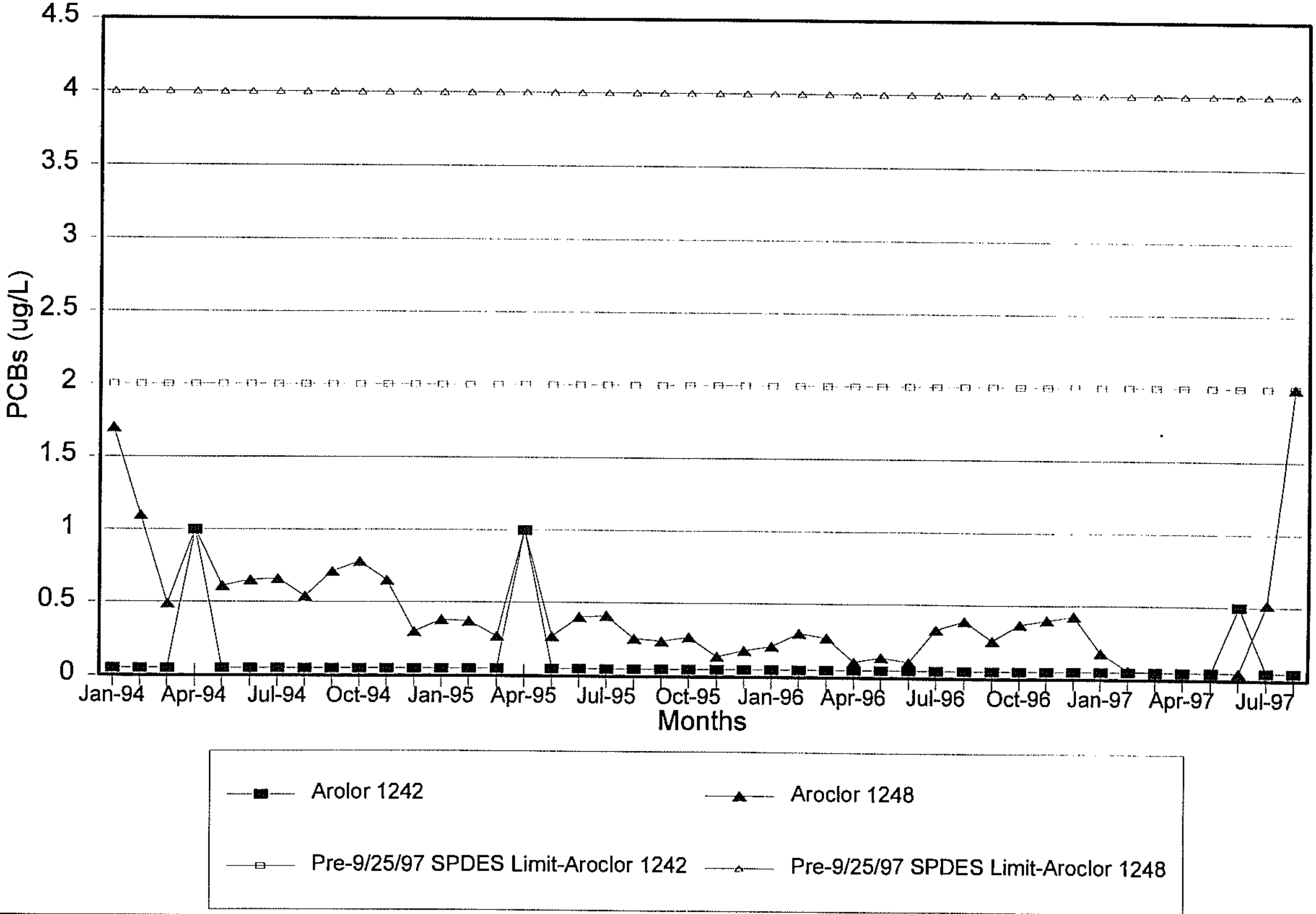
Date Printed: 03/16/00 10:03:54
DBF File: N:\3247\21535\SRI\TEMP.DBF
FXP File: N:\3247\21535\SRI\DIOSOTEQ.FXP

File Number: 3247.21535

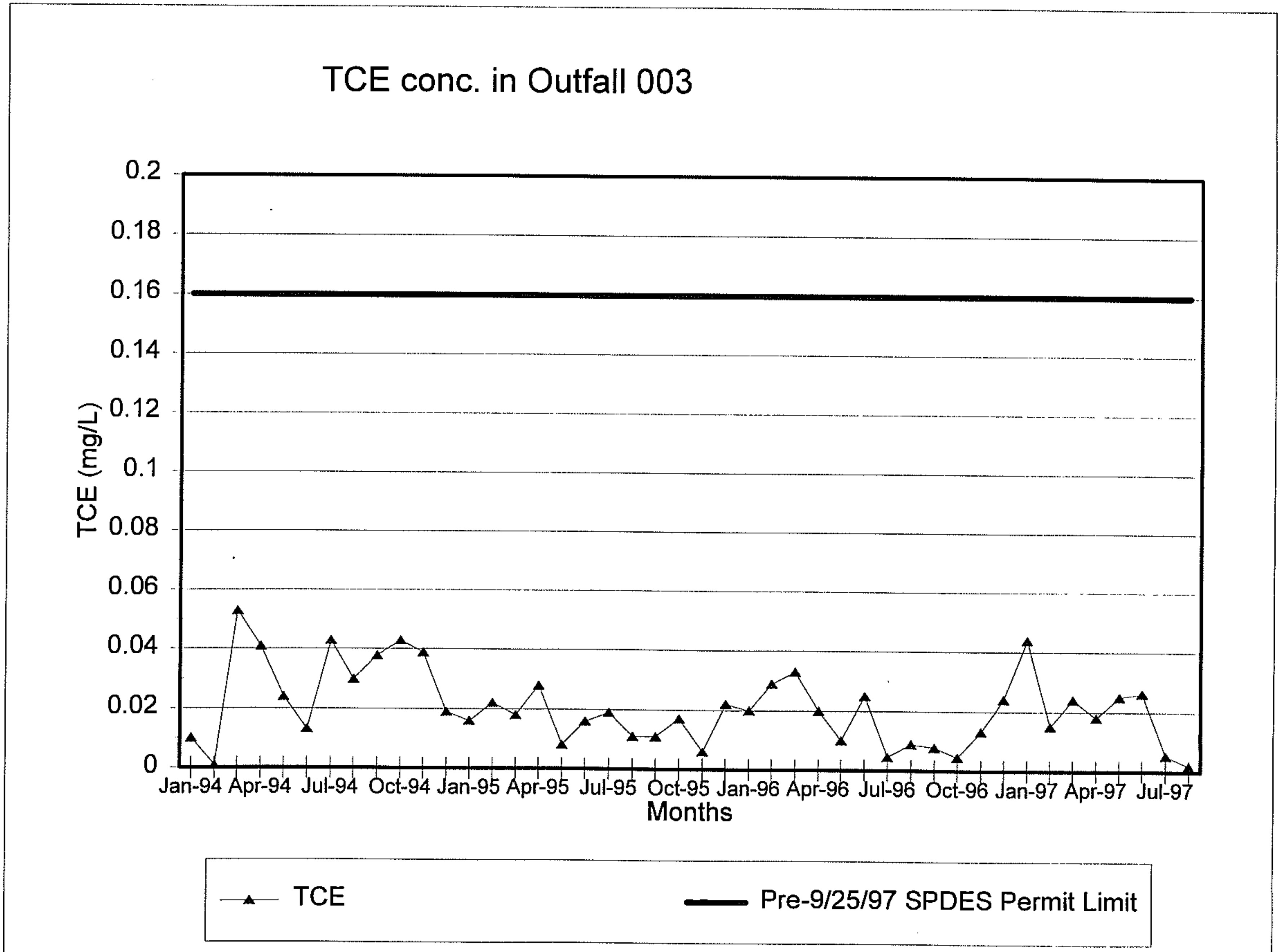
RACER0060885

Historic SPDES monitoring data

PCB conc. in Outfall 003



RACER0060887


TCE conc. in Outfall 003
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
TCE (mg/L)
Jan-94 Apr-94 Jul-94 Oct-94 Jan-95 Apr-95 Jul-95 Oct-95 Jan-96 Apr-96 Jul-96 Oct-96 Jan-97 Apr-97 Jul-97
Months
TCE
Pre-9/25/97 SPDES Permit Limit

Historic ground water elevation data

Appendix F. *Ground Water Elevation Data Summary*

Investigation	Note	Well ID	Initial Ground Water Elevations Date	(ft)	Recent Ground Water Elevations (ft) 3/96	3/97	6/96	6/97	9/96	9/97	12/95	12/96
EDIHI85		P-1	6/5-6/85	383.20								
EDIHI85		P-2	6/5-6/85	380.93								
EDIHI85		P-3	6/5-6/85	378.05								
EDIHI85		P-4	6/5-6/85	374.71								
EDIHI85		P-5	6/5-6/85	377.18								
EDIHI85		P-6	6/5-6/85	373.60								
EDIHI85		P-7	6/5-6/85	373.18								
EDIHI85		P-8	6/5-6/85	386.59								
EDIHI85		P-9	6/5-6/85	380.87								
EDIHI85		P-10	6/5-6/85	374.69								
EDIHI85		P-11	6/5-6/85	375.60								
EDIHI85		P-12	6/5-6/85	376.34								
EDIHI85		P-13	6/5-6/85	385.83								
EDIHI85		P-14	6/5-6/85	386.20								
EDIHI85		W-1S	6/5-6/85	379.17								
EDIHI85		W-1D	6/5-6/85	378.24								
EDIHI85		W-2S	6/5-6/85	378.15								
EDIHI85		W-2D	6/5-6/85	378.93								
EDIHI85		W-3S	6/5-6/85	375.71								
EDIHI85		W-3D	6/5-6/85	376.20								
EDIHI85		W-4S	6/5-6/85	393.46								
EDIHI85		W-4D	6/5-6/85	393.46								
EDIHI85		W-5S	6/5-6/85	376.39								
EDIHI85		W-5D	6/5-6/85	376.35								
EDIHI85		W-6S	6/5-6/85	376.82								
EDIHI85		W-6D	6/5-6/85	376.36								
EDIHI85		W-7S	6/5-6/85	--								
EDIHI85		W-7D	6/5-6/85	--								
EDIHI85		W-8S	6/5-6/85	374.08								
EDIHI85		W-8D	6/5-6/85	375.49								
EDIHI85		W-9S	6/5-6/85	375.10								
EDIHI85		W-9D	6/5-6/85	375.79								
EDIHI85		U-1S	6/5-6/85	389.29								
EDIHI85		U-1D	6/5-6/85	389.67								
EDIHI85		U-2	6/5-6/85	391.19								
EDIHI85		WT-1	6/5-6/85	386.06								
EDIHI85		WT-3	6/5-6/85	381.58								
EDISS86	(1)	T-1	04/01/86	383.82	384.55	385.38	383.91	383.64	382.39	(4)	384.04	385.82
EDISS86	(1)	T-2	31503	383.46	384.91	385.36	384.03	383.7	382.15	381.96	384.09	385.34
EDISS86	(1)	T-3	04/01/86	384.75	383.70	384.66	382.61	382.65	380.90	380.78	384.01	384.59
EDISS86	(1)	T-4	04/01/86	384.96	384.44	385.63	382.94	382.70	380.87	(4)	384.39	385.02
EDISS86	(1)	T-5	04/01/86	383.79	384.78	385.36	383.73	383.64	382.07	(4)	384.39	385.65
EDISS86	(1)	T-6	04/01/86	385.09	386.95	390.73	385.91	384.41	383.70	382.93	387.67	391.39
EDISS86	(1)	T-7	31503	384.36	386.43	388.79	383.96	383.46	(4)	(4)	387.24	389.15
EDISS86	(1)	T-8	04/01/86	383.75	(6)	386.23	383.96	382.09	384.08	(4)	383.52	386.52
EDISS86	(1)	T-9	04/01/86	385.89	385.68	385.98	382.82	383.77	385.66	(4)	385.05	386.50
EDISS86	(1)	T-10	04/01/86	384.63	387.38	386.82	386.12	385.70	385.91	385.67	385.36	387.38
EDISS86		T-11	04/01/86	382.24								
EDISS86		T-13	31503	381.50								
EDISS86		T-15	04/01/86	381.95								
EDISS86		T-18	04/01/86	380.89								
EDISS86		T-21	04/01/86	379.95								
EDISS86		T-24	04/01/86	382.20								
EDISS86		T-26	31503	376.30								
EDISS86		T-29	04/01/86	381.95								
EDISS86		T-33B	04/01/86	378.87								
EDISS86		T-34	04/01/86	379.23								
OBGSIM	(3)	MW-1S	32414	375.86	379.15	378.78	378.27	377.53	377.25	(10)	377.29	377.77
OBGSIM	(3)	MW-1D	09/28/88	375.41	376.96	376.87	376.33	376.00	375.49	(10)	377.29	376.80
OBGSIM	(3)	MW-2S	09/28/88	375.28	380.77	380.74	380.26	379.49	378.93	(10)	377.29	380.90

Investigation	Note	Well ID	Initial Ground Water Elevations Date	(ft)	Recent Ground Water Elevations (ft) 3/96	3/97	6/96	6/97	9/96	9/97	12/95	12/96
OBGSIM	(3)	MW-2D	09/28/88	375.66	377.28	377.31	376.88	376.57	376.00	(10)	377.29	377.16
OBGSIM	(3)	MW-3S	09/28/88	375.42	377.58	377.46	376.03	375.73	374.86	(10)	377.02	377.55
OBGSIM	(3)	MW-3D	32414	375.47	376.15	376.1	(6)	375.3	374.79	(10)	375.82	376.02
OBGSIM	(3)	MW-4S	09/28/88	375.70	378.09	377.88	376.17	375.95	374.79	(10)	377.29	377.91
OBGSIM	(3)	MW-4D	09/28/88	375.64	376.00	375.93	375.50	375.20	374.71	(10)	375.60	375.83
OBGSIM	(3)	MW-5S	09/28/88	375.38	377.41	377.05	375.97	375.80	374.99	(10)	376.77	377.26
OBGSIM	(3)	MW-5D	09/28/88	375.24	375.73	375.71	375.38	375.09	374.67	(10)	375.40	375.55
OBGLCHI	(8)	OBG-1	07/29/92	370.05								
OBGLCHI	(8)	OBG-2	07/29/92	370.85								
OBGLCHI	(8)	OBG-3	07/29/92	370.18								
OBGLCHI	(8)	OBG-4	07/29/92	371.61								
OBGLCHI	(8)	OBG-5	33814	371.75								
OBGLCHI	(8)	OBG-6	07/29/92	372.02								
OBGLCHI	(8)	OBG-7A	07/29/92	371.58								
OBGLCHI	(8)	OBG-7B	07/29/92	371.27								
OBGLCHI	(8)	OBG-7C	07/29/92	371.62								
OBGLCFI	(9)	MW-8	07/29/92	372.01								
OBGLCFI	(9)	MW-9	07/29/92	372.45								
OBGLCFI	(9)	MW-10	07/29/92	371.68								
OBGLCFI	(9)	MW-11	07/29/92	(7)								
OBGLCFI	(9)	MW-12	07/29/92	370.37								
OBGLCFI	(9)	MW-13	07/29/92	372.46								
OBGLC93		MW-3D	07/29/92	375.75								
OBGLC93		MW-9D	07/29/92	(5)								

Notes:

(1) From 1986-1997, ground water elevations measured bi-weekly and reported monthly under SPDES consent order.
(2) From 1983-1997, ground water elevations measured monthly and reported quarterly under SPDES consent order.
(3) From 1986-1997, ground water elevations measured quarterly and reported quarterly under post-closure monitoring progra
(4) Monitoring well dry at time of sampling
(5) Monitoring well exhibited artesian conditions, piezometric surface higher than the top of casing elevation
(6) Monitoring well not sampled - obstructed by snow and ice
(7) Monitoring well not located - well suspected to have been destroyed during 1991 installation of Ley Creek Relief Interceptor Sewer
(8) Monitoring wells initially sampled 12/3-8/86, most recent data collected during the Ley Creek Remedial Investigation (OBGLC93) presented here
(9) Monitoring wells initially sampled 10/6/88, most recent data collected during the Ley Creek Remedial Investigation (OBGLC93) presented here
(10) Monitoring well sampling data not available.
-- Ground water elevation not reported

Key:

EDIHI85 EDI Engineering & Science, Inc.
Hydrogeological Investigation, September 1985
EDISS86 EDI Engineering & Science, Inc.
Solvent Spill Hydrogeological Investigation, April 1986
OBGLCHI O'Brien & Gere Engineers, Inc.
Report - Hydrogeologic Investigation of Fill Area Along Ley Creek, April 1987
OBGSIM O'Brien & Gere Engineers, Inc.
Report- Surface Impoundment Post Closure Monitoring Program, March 1989
OBGLCFI O'Brien & Gere Engineers, Inc.
Field Investigation - Ley Creek Dredged Material Area, July 1989
OBGLC93 O'Brien & Gere Engineers, Inc.
Report - Ley Creek Remedial Investigation, September 1993.

NYSDEC comments on 1997 Preliminary RI/FS Report

	Miscellaneous Errors/Clarifications			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
1	p. 1	There are many obvious errors or inconsistencies in the report which have made double checking the validity of the information a necessary and unduly cumbersome, part of the review. Details on such errors are provided below.	Specific comments are addressed below.	Specific comments addressed below.
2	p. 2	Page xxi: Should the second sentence of the third full paragraph on page xxi refer to "... more recent previous routine sampling data..."?	The second sentence will be revised to refer to: "more recent routine sampling data collected in..." and will include the most recent data collected.	Ground water discussions were updated to reflect current conditions.
3	p. 2	Page xxix, pp. 189 and 190-194: For purposes of CERCLA, the second threshold criterion listed also includes compliance with ARARS. The text is to be revised to make it clear the SCGs include ARARS.	The text will be revised to indicate that SCGs include ARARs.	The SRI Report no longer includes FS discussions. This comment will be addressed in the Supplemental FS Report.
4	p. 4	Page 19: Contrary to the text, the hydraulic oil sumps and tanks are not shown on Figure 1-4.	Figure 1-4 will be revised to depict the hydraulic oil sumps and tanks locations.	Figures 1-3 and 1-4.
5	p. 6	Page 52: 1st bullet: Site AI A is NOT consistent with Site 3 of the 1987 Storm Outfall Assessment. The latter Site is at the opposite end of the property. Was Site 2 the intended reference? Should site B1A on page 52 instead be referred to as BAI? If so, the report should be revised accordingly.	The text will be revised to delete the second sentence from that bullet, which incorrectly indicates that A1A is consistent with Site 3. A1A is also not the same as Site 2; Site 2 is the same as manhole A1. The 1989 Storm Sewer Sampling Summary Report refers to site B1A as a sample location, which is the same location as manhole #BA1. It will therefore be noted in the text that site B1A is the same as BA1.	Page 56
6	p. 6	Figure 1-8 should also indicate the locations of 03B and 04I.	Figure 1-8 will be revised to indicate the manholes sampled for Outfalls 003, 004, 03B, and 04I.	Figure 1-8

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	Miscellaneous Errors/Clarifications			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
7	p. 7	Page 59: Contrary to the text, the 1992 OBG sediment sampling locations are not indicated on Figure 2-10. The report needs to be revised accordingly.	Figure 2-10 will be revised to indicate the outfall and downstream sampling locations, as referred to in the text.	To provide the latest sediment conditions in Ley Creek, the SRI Report presents the latest data collected in 1996, 1998 and 1999. Sample locations are shown in Figures 2-7 and 2-8.
8	p. 7	Page 64: *Site Geology:* The text states that the thickness of fill material at the former landfill is as great as 16 feet and it references boring BH-2. However, a review of the boring log for BH-2 does not indicate that native materials were encountered before the boring was terminated at 16.0 feet. This needs to be clarified.	The text will be revised to refer to the thickness of the fill material at the landfill as "greater than 16 ft."	Page 66
9	p. 8	The borings associated with HA-6 need to be identified on Figure 3-4.	Figure 3-4 will be revised to include boring locations and data associated with suspected former PCB oil underground storage tanks (borings HA-5 and HA-6), as well as hydraulic oil sumps/tanks. PCB concentrations in borings HA-5 and HA-6 were less than 50 mg/kg.	Figures C-1 and 3-5C
10	p. 9	The 1,2-dichloroethylene concentration for BH-48 on Figure 3-6 should be corrected to 310 μg/kg.	Figure 3-6 will be revised to make this correction.	Figure 3-5A

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	Miscellaneous Errors/Clarifications			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
11	p. 11	Page 78: It is assumed that the first sentence of the third paragraph should be revised to state "... MW-1S to MW-5S and MW-1D to MW-5D". If so, the appropriate change should be made.	The text will be revised as noted.	The ground water discussion has been revised to reflect most current ground water data (1999), thus, text referring to 1997 data has been deleted.
12	p. 11	The last sentence of the third paragraph should be revised to state "... concentrations in wells MW-1D to MW-5D are presented ......".	The text will be revised as noted.	
13	p. 12	In the first sentence of the second paragraph, "MW-3D" should be replaced with "W-3D".	The text will be revised as noted, and additionally, "MW-6D" will be replaced with "W-6D."	
14	p. 19	Figure 2-4: Two manhole locations are labeled A12.	Figure 2-4 will be revised to remove the label A12 from the manhole which is further south, which does not have an identifier code associated with it.	Figure 1-8
15	p. 19	Figure 3 -5: Legend indicates green square represents contamination < (below certain levels). It should be changed to > (greater than).	The figure will be revised as noted.	Figures 3-5A, B, and C
16	p. 20	A review of Table 3-14 and Figure 2-10 suggests an inconsistency regarding the location of SW-1. The table and/or figure need to be revised as appropriate.	Table 3-14 will be revised to indicate that SW-1 is approximately 4,200, not 420, ft downstream from Outfall 003.	To provide the latest sediment conditions in Ley Creek, the SRI Report presents the latest data collected in 1996, 1998 and 1999. Sample locations are shown in Figures 2-7 and 2-8. Data results are shown in Figures 3-17 and 3-18.
17	p. 20	Figure 3-17 should be revised so that it reports the correct value of 1.280 parts per million PCBs for sample location L9.	Figure 3-16 (instead of 3-17) will be revised to report the correct PCB concentration of 1.28 mg/kg at L9.	Figure C-7

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	Historic Plant Layout and Operations			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
18	p. 2	Page 4: *Plating Operations:* In regard to the plating operations, trenches are not apparent on Figure 1-3. Revise the figure to clearly depict the trenches.	Shallow trenches (2 ft wide x 1.5 ft deep) were formed into the concrete surrounding each plating tank to capture leaks or overflows. Figure 1-3 indicates the locations of Plating Unit Nos. 1 through 9, but historic drawings depicting the exact trench locations are not available.	No revision.

	Historic Plant Layout and Operations			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
19	p. 2	*Die casting and press line operations:* What do the floor layout plans indicate regarding the locations of the sumps, trenches, and pits? The revised report should contain copies of these plans. Does "pit" have the same meaning as "trench"? What is known about the purpose of the trenches, pits, and sumps? Have former employees been interviewed to assist in determining how the sumps, trenches, and pits were used?	*Plating:* Prior to IWTP construction, trenches (up to approximately 18 inches in depth) formed into the concrete surrounding the plating tanks drained to the process sewer system, which tied into the storm sewer outside of the building. As part of IWTP construction, reinforced concrete plating sumps (typically 5 ft by 5 ft by up to 5 ft depth) were installed to collect plating tank trench drainage, and the reinforced concrete acid/alkali bunker was installed to intercept process sewer flows. Cyanide and chromium plating wastewaters were pumped via overhead piping from the sumps to the IWTP. Acid/alkali wastewaters were either pumped from the acid/alkali sump through overhead piping to the acid/alkali bunker or the IWTP, or acid/alkali trenches continued to drain to the process sewer system, which was then connected to the acid/alkali bunker. *Die casting:* In the die cast operations, reinforced concrete quench pits of approximate 10 ft depth were located below the die cast machines for quenching of cast parts. Reinforced concrete sumps were located in each quench pit, and were pumped out for pit clean out. Pit sumps were pumped out to the process sewer system, which connected to the storm sewer system prior to IWTP construction, and to the acid/alkali bunker and IWTP following IWTP construction. Parts went from the quench pits to presses for trimming via a conveyor. Drippings, trimmings from the presses, and off specification parts went into a shaker trench, which consisted of a shaker conveyor, which conveyed the trimmings and off specification parts to a reverberatory furnace, and a reinforced concrete trench (of approximately 1.5 ft depth) underlying the conveyor, which carried the drippings to a 12 in x 12 in x 3 in reinforced concrete sump which led to the storm sewer system. Historic plant drawings indicate the configuration of die cast units within the die cast area, including pits, and shaker and utility trenches. *Press lines:* In the press line operations, reinforced concrete pits of up to approximately 14 ft depth were located beneath the press lines, and contained air cushions and air bladders. Reinforced concrete sumps were located in each pit, and were pumped out for pit clean out. Pit sumps were pumped out to the process sewer system, which connected to the storm sewer system prior to IWTP construction, and to the acid/alkali bunker and IWTP following IWTP construction. Separate trenches are not recollected by former employees to be part of press line operations. Historic layout drawings for the press line operations were not found during the historic drawing review. *Injection molding:* Hydraulic oil leakage collected in shallow concrete trenches (of approximately 6 in depth; some cut and others formed) surrounding each injection molder. Prior to implementation of the oil reclamation system, oil was pumped out for off-site disposal. In approximately 1975, thirteen underground concrete sumps (depths and construction described in Attachment 1) were installed to collect oil from the trenches, and five underground steel tanks (depths and construction described in Attachment 1) were installed to store molder oil when molder repair was necessary. Sumps were pumped out with portable pumps, which transported oil to the above-ground Dirty Oil Transfer Station, and pumped via overhead piping to the oil reclamation system at the IWTP. Several former employees have been interviewed related to these issues.	Pages 5, 6, and 7.
20	p. 2	In regard to all of the operations, where did materials that would collect in the sumps, trenches, and pits go to? How deep were these features? Did the depths vary? How were the sumps, trenches and pits constructed?		

	Historic Plant Layout and Operations			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
21	p. 2	Page 5: The text should clearly state that the hydraulic systems of the injection molders used oil containing PCBS. Did the die-casting machines also use PCB-containing oils?	The plant used Pydraul PCB hydraulic oil in the die cast machines. There is no record of whether the hydraulic systems of the former press lines contained PCB oil. The text will be revised to include these points, as well as to note that some of the injection molder hydraulic systems contained PCBs.	Page 6
22	p. 3	Contrary to the text, Figure 1-4 does not indicate the locations of the oil sumps and tanks used in conjunction with the molding operation. Figure 1-4 needs to be revised as appropriate. The text should indicate how the oils were collected and handled once they were released to the trenches surrounding the molders.	Figure 1-4 will be revised to include the locations of the hydraulic oil sumps and tanks, as indicated by the text. The text will be revised to include a discussion of the collection/handling of oil, as discussed above.	Figures 1-3 and 1-4 Revised text on Page 7
23	p. 3	Contrary to the text, Figure 1-4 does not indicate the locations of the painting facilities. Figure 1-4 needs to be revised as appropriate.	The text will be revised to refer to Figure 1-3, which indicates the locations of both the paint room and the paint storage and mix rooms.	Figure 1-3
24	p. 3	Page 6: Upon removal/abandonment, were the soils around the hydraulic oils tanks and sump sediments sampled? This needs to be indicated, and any data included in the report.	There is no known analytical data for soils around the hydraulic oil sumps and tanks or sump sediment. Pursuant to a SPDES consent order, hydraulic oil sumps were filled, hydraulic oil tanks were pulled, and piping associated with the sumps and tanks was plugged. This information will be noted in the report.	Page 7
25	p. 3	Page 6: Were there any spills, or leakage of thinner from the paint thinner piping, storage room or paint room, other than the known 1985 spill outside the building? If so, data regarding such is to be provided.	In approximately 1976 or 1977, a thinner odor was detected in the abandoned fire main west of the administration building. The odor was found to be related to a thinner line pipe break in the courtyard area, which had resulted in thinner migrating into the abandoned fire main and to the plugged end west of the administration building. The pipeline was repaired. No documentation is available in the plant records related to this event.	No revision

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	Historic Plant Layout and Operations			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
26	p. 3	Page 6: *Main Manufacturing Building:* The report should include a figure which clearly depicts the footprints of the various additions to the Main Manufacturing Building. All of the report's figures should be to scale. If the locations of the buildings, sewers, parking areas, monitoring wells, etc. are known to be accurate but some of the sampling locations (e.g. borings within the buildings) are not, this should be indicated on the figures.	A figure will be provided which will indicate the footprints of each of the building additions. GM is currently conducting a survey of the former IFG facility property. The site map generated from the survey will be used as a base map for future document figures. Non-surveyed sample locations will be indicated as approximate locations on the scaled drawings.	Figure 1-2
27	p. 3	Page 7: The natural gas house needs to be identified on Figure 1-2. Is the "Bulk Handling Building" on Figure 1-2 the "metal sided shed constructed over the rail line" which is referred to in the text?	The natural gas house will be identified on Figure 1-2. The text will be revised to refer to the "bulk handling building" instead of the "railcar building."	Pages viii, 3, 8 and 134 Figure 1-2
28	p. 3	Page 7: *IWT Plant-* Figure 1-5 does not depict the temporary hazardous waste storage area. Is it the same as the Hazardous Waste Accumulation Area?	The text will be revised to note that the temporary hazardous waste storage area is also known as the Hazardous Waste Accumulation Area.	Page 9
29	p. 3	The report should state the types of construction materials used in the various tanks and other storage facilities in the IWT Plant. The report should also address what is known regarding the integrity of these facilities. This should be based on any structural integrity testing or evaluations which may have been performed as well as environmental sampling results for this area. What is known regarding operations practices in this area? What materials were stored on the Storage Pad? How was Trichloroethylene (TCE) handled in this area? The report should provide any such information that may be available.	The revised submittal will document the construction materials of the IWTP tanks and storage facilities, which are also presented in Attachment 2. Materials stored on the storage pad include waste oil drums, grease drums, waste TCE drums, and miscellaneous drums. The area was curbed; drums were stored on skids, and aisles were maintained between rows of drums.	Appendix G

	Historic Plant Layout and Operations			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
30	p. 3	Page 8: The wet pad sump and courtyard sump locations need to be depicted on one of the report figures. What material do these sumps collect? The report should provide any such information that may be available.	A figure will be provided which indicates the location of each of the IWTP influent sources, including the wet pad sump, located in the IWTP area, and the courtyard sump, which is located outside of the building north of the paint storage/mix room. The wet pad sump currently only collects stormwater; historically it collected drainage from the cleaning of molders. The courtyard sump is not currently operational; historically, it was designed to drain water used in the event of a spill in the paint room or compactor area.	Figures 1-3, 1-4, and 1-6
31	p. 3	Page 8: *Mold Storage building:* What types of plating chemicals and solvents were stored in the tank farm? What types of hazardous waste was stored in the area? Were there any spills/releases? The report should provide any such information that may be available.	The text will be revised to describe the chemicals stored in the mold storage/tank farm building. The tanks, contents, and capacity are as follows: three 9,000 gallon cyanide solution, one 7,000 gallon TCE, two 13,000 gallon acid-alkali, one 12,500 gallon chrome solution, and one 12,000 gallon sulfuric acid. Only process chemicals were stored in this building; no wastes, including hazardous wastes, were stored in the building. There were no known or documented spills/releases, however, the mold storage/tank farm building is a suspected source of contamination to ground water. Historic drawings show a trench in the building which discharged outside of the building to the ground. Chlorinated hydrocarbon concentrations in ground water in this vicinity in 1985 (244 ug/l in W-4D) were the same order of magnitude as chlorinated hydrocarbon concentrations measured in a mold storage/tank farm building sump in 1995 (230 ug/l).	Page 9
32	p. 3-4	Page 8: *Main transformer substation:* Were there any spills/releases of fluid at the substation? If so, what data was collected and how was the spill cleaned up?	There are no known or documented spills/releases at the substation. According to GM plant personnel, previous sampling conducted by transformer maintenance personnel indicated that a 3750 KVA transformer contained PCBs at a concentration greater than 50 ppm and less than 500 ppm. This transformer was removed as part of facility decommissioning activities, and a concrete pad wipe sample indicated non-detectable PCB concentrations (<5 ug/100 cm^2).	No revision
33	p. 4	Page 8: *Process/Storm/Sanitary Sewers:* Might infiltrating groundwater also be contributing to the flow noted in the process sewers?	Ground water infiltration is a likely flow contribution to the process sewers.	Page 10

	Historic Plant Layout and Operations			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
34	p. 4	Figure 1-8 indicates that the sanitary sewer is located beneath the Main Manufacturing Building only in the southeast portion of that building. Is this correct?	Figure 1-8 will be revised to show the full layout of the sanitary sewers under the manufacturing building.	Figure 1-8
35	p. 4	The report should describe the means by which the portion of the storm sewer beneath the Main Manufacturing Building was abandoned. It should also describe what is known or believed regarding the types of bedding/backfill materials which were used for these and all other subsurface utilities at the facility.	The text will be revised to describe the means of abandonment and known information regarding bedding materials. Attachment 3 to this document provides additional information regarding the storm sewer modifications.	Page 11 and 129 /Appendix G
36	p. 4	Page 9: *Closed Surface Impoundments:* The report should describe the types and concentrations of contaminants which were present within the surface impoundments prior to their closure. Did overflows from the IWT sump previously discharge to either or both of the impoundments? If so, this needs to be discussed in the report.	Text will be added to this section to describe the surface impoundment characterization data prior to closure. Prior to the early 1980's, an overflow pipe from the IWT sump connected to the storm sewer leading to the lagoon/impoundment. In the early 1980's, the overflow pipe was plugged and a containment area was constructed to contain IWT sump overflow, which would be pumped out by a tanker in an overflow event.	Page 12
37	p. 4	What does "split sump 62/63" refer to on Figure 1-6?	Split sump 62/63 is located in the IWTP basement, and receives sludge/water during cleaning of the floating sedimentation tank. Water from this sump is pumped to the equalization tank, and sludge is pumped to the sludge thickeners. Figure 1-5 will be revised to indicate the IWTP basement layout, and the locations of IWTP sumps, including split sump 62/63.	Figure 1-5
38	p. 4	Page 10: Prior to the establishment of Outfall 003, did Outfalls 001 and 002 always discharge to Ley Creek via a single pipe or a single swale?	Initially, Outfalls 001 and 002 combined for discharge in a swale. In 1973, the swale was piped, and the outfall discharges combined in that pipe to Ley Creek.	No revision

	Historic Plant Layout and Operations			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
39	p. 4	To avoid confusion, the report needs to provide greater detail regarding the degree of storm sewer replacement and abandonment which occurred as part of each of the 1981 and 1985 Consent Orders. For instance, the text indicates that "...the portion of the storm sewer system beneath the manufacturing building was abandoned..." as a result of the 1981 Consent Order. However, the text also indicates that in compliance with the 1985 Consent Order, "Additional replacement of storm sewer piping underneath the manufacturing building with overhead piping and plugging of inactive storm sewers" occurred.	Sections 1 and 4, and Figure 1-8, will be revised to provide further detail regarding the two stages of sewer replacement/abandonment. Attachment 3 to this document provides additional detail on the sewer modifications.	Text revised to reference Appendix G.

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40	p. 4-5	Page 19: *CRA Phase II ESA:* The present condition and possible impacts of the storm water sewer trench, plating sumps, and other potential areas of contamination under the manufacturing building need to be better defined. The following information is necessary: The method in which the former storm water sewer trench under the manufacturing building was removed from service needs to be explained. If the sewer was simply plugged, as is inferred from this section of the RI/FS, any residual contamination left inside the lines has the potential to leach into the subsurface soils and/or groundwater via cracks or fissures in the storm sewer prior to reaching the collection sumps. The report does not indicate whether any cleaning, sealing, grouting, etc. of the storm sewer was performed prior to or after removal from service.	The storm sewers beneath the building were plugged, and oil/water collection sumps were installed to intercept water and oil within the lines. These sewers were not flushed. No integrity testing has been performed, but it is apparent that ground water infiltrates these sewers because water continues to be collected from the oil/water collection sumps.	Pages 11 and 129

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41	p. 5	Sampling data presented in Section 3 of the RI/FS indicates that 3 samples taken from the soils of the former trench and 5 samples in the vicinity of the former hydraulic oil sumps contain PCBs in excess of 10 mg/kg. Paint room and plating sump soil data in Section 3 show elevated levels of solvents and metals, respectively. Were these areas the ones cleaned in the deactivation activities referenced in Section 4.2? Is it possible that these contaminants migrated to groundwater? These areas should be more closely investigated to determine the full extent of contamination. For example, the means of abandonment of the subsurface structures referenced in this section, especially those referenced above, need to be more fully defined. Information on the integrity of the structures at time of abandonment, and whether surficial contamination was noted/removed in the vicinity of said structures needs to be provided to evaluate the potential of each of these areas with respect to environmental impacts. While some of this information is presented in Section 4.2, it is not noted whether any contamination due to leaks, spills, etc. were observed. This information would be useful in determining the extent of contamination at the site.	Areas cleaned as part of decommissioning activities after plant closure were aboveground surfaces, which do not likely correlate with subsurface contamination. It is unlikely that facility surface contamination migrated to ground water. As previously discussed, the means of historic abandonment of subsurface structures will be addressed in the report.	Section 1.2.2

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42	p. 5	Page 20: *On-site Landfill:* Was the landfill used continuously from 1952-1970?	The landfill was used from 1952 to 1961 or 1962 for the disposal of boiler fly ash and bottom ash, paint and buffing sludges, plating wastes (estimated 10 cu yd per year), general trash, and construction debris. Six to eight feet of soil/clay was placed on the landfill in 1962 or 1964. Disposal of boiler fly ash and construction debris continued until about 1970. It is unclear whether the material placed in the landfill after 1964 was placed on top of the soil/clay, or in a different area of the landfill.	Page 22
43	p. 5	Page 20: *General Storage Area:* The report needs to specify the types of equipment which were stored in the General Storage Area.	Equipment about to be scrapped (e.g., conveyors, fork trucks) was stored in this area.	Page 23
44	p. 5	Page 21: *Storm Sewer Trench* - What rationale was employed in selecting the portion of the inactive storm sewer to be addressed during the April 1996 investigation?	This portion of the inactive storm sewer was selected for investigation in 1996 because: • it is the portion of the storm sewer leading to oil/water collection sump #5, in which an oil layer was present, and • based on its proximity to total petroleum hydrocarbons detected in soil samples collected in the fill surrounding abandoned hydraulic oil sumps during the 1995 sampling activities.	Page 24
45	p. 6	Page 54: Does Onondaga County own the storm water drainage system (or a portion thereof) which discharges to Outfall 004?	Onondaga County owns the pipeline which discharges to Outfall 004, and has an easement for access to the pipeline on GM's property.	No revision
46	p. 8	Figure 3-4, as well as all of the other report figures, needs to include scales. In addition, the figures which depict the Manufacturing Building inactive storm sewers should indicate the prior directions of flow.	GM is currently conducting a survey of the former IFG facility property. The site map generated from the survey will be used as a base map for RI/FS Report figures. Figures which depict the inactive storm sewers will be revised to note flow directions.	Figure 1-9 and all figures

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47	p. 10	*Former Thinner Tanks Area* What is known regarding the Manufacturing Building's foundation (depth, construction materials, etc.), in the vicinity of this area?	The foundation in the 1974 building addition is reinforced concrete with steel piles. Foundation drawings were not located which would indicate foundation depth.	No revision
48	p. 10	The report should provide greater detail regarding the types of materials which were disposed of in the former landfill, as well as the area which " was reportedly filled with construction debris and soil..." and the time periods during which materials were placed in these areas.	The source of fill material placed in the northern property area was material excavated as part of building addition and other construction projects in various parts of the facility. There is no documentation of specific materials placed, locations, or time frames.	No revision
49	p. 10-11	A comparison of Figure 2-8 with Figure 9 (Exhibit N) suggests an inconsistency in regard to the location of the former swale in the general area of Outfall 003. The available information needs to be reviewed to determine, to the extent possible, the actual location of this feature.	A revised figure will be presented which depicts the former swale location based on a 1973 topographic survey of the northern property area.	Figures 3-11A, C, and E
50	p. 11	It appears that some of the soils associated with the former drainage swale have not been addressed through any remedial activities. Is this correct? Furthermore, a review of analytical results for this area indicates that some of the very high detections of PCBs in soils may not be related to the swale. What is known about other potential contaminant sources in this area?	The Ley Creek Relief Interceptor Sewer Soil Removal Interim Remedial Measure (IRM) was the only remedial measure performed which addressed soil associated with the former drainage swale. This IRM consisted of the removal of PCB-contaminated soil which was in the path of the Ley Creek Relief Interceptor Sewer. Other portions of the former drainage swale were not addressed as part of the IRM. As discussed in Maureen Salanger's (O'Brien & Gere) May 11, 1998 letter to Wayne Mizerak (NYSDEC) regarding the former drainage swale (with respect to the Ley Creek PCB Dredgings site), historic drawings and aerial photos indicate the presence of two drainage swales on the northern property, which are potential PCB sources. Further, the northern property was used for placement of potentially contaminated soil/fill generated during building construction activities.	No revision

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51	p. 23-24	A detailed review of the PCB data (and possible manufacturing records) will need to be performed to determine whether site related PCB Aroclors are truly limited to 1242 and 1248. To accomplish this, GM should submit copies of representative chromatograms.	Available chromatograms associated with data for the former IFG facility media will be provided to NYSDEC. GM used Pydraul and Askeral in plant operations. No Aroclor documentation is available.	Section 3 has been revised to reflect SRI data. Chromatograms for the 1999 PCB data are available upon request from NYSDEC.

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52	p. 1	The report should be a "stand alone" document which does not require substantial cross-referencing with other reports. A significant problem with the report is that it does not provide the rationale supporting the various RI work tasks conducted; eg, sample locations, sample analytes, analytical methods, etc. This is the type of key information that is discussed and ultimately agreed to before the field work is conducted as part of the work plan development. Of course, in this case, the work was done without benefit of such consultation/review. Nonetheless it is still critical information to the process.	To the extent available in previous documents and based on GM input, rationale supporting the various RI work tasks will be included in a revised document.	Rationale for the 1999 SRI activities is provided in Sections 2.1, 2.2, and 2.4

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53	p. 5	Page 27: Section 2.1: No mention is made of any background soil samples except three by EDI in 1985, and these were apparently not submitted for chemical analysis. Without appropriate background samples, differentiation between site contributions and industrial background concentrations of contaminants such as lead and PAHs is not possible. This is especially important since "anthropogenic background" is used as justification for eliminating some pathways and/or contaminants from evaluation.	Off-site background soil conditions have not been assessed. Soil samples collected during installation of soil borings for wells U-1S, U-1D, and U-2 were not submitted for analysis during the 1985 Hydrogeological Investigation. Collection of background soil data will be incorporated into the Supplemental RI Work Plan. Anthropogenic background was not used as justification for eliminating pathways and/or contaminants from evaluation at the former IFG facility, only in Ley Creek Deferred Media.	Page 33. Background soil sample OBG-TB-33
54	p. 5-6	Page 27: *2nd bullet:* It appears that background groundwater quality may not have been adequately addressed. For instance, while wells which are considered background should be sampled for all analytes, this has not been done, as would be necessary for background wells. Furthermore, upgradient/background samples are to be taken in areas not likely to have been impacted by facility use which is not the case here. The storage pad area, by its very designation and use could have been impacted by contamination, as could the area around U-2, next to the RR tracks/storm sewer. These wells have not been recently sampled to indicate recent influx of any contamination, and need to be.	As discussed in Section 2.2.5, samples from U-1D and U-2 were analyzed for priority pollutant volatiles, base neutrals, acid extractables, pesticides, total metals, and PCBs. A sample from U-1S was analyzed for priority pollutant volatiles. Collection of site-wide ground water data, including background off-site ground water data, will be incorporated into the Supplemental RI Work Plan.	Page 47. Background well OBG-11, U-1S, and U-1D.
55	p. 6	Page 30: *Trench Excavation:* Other than not observing any floating oil in the trenches, what other observations or sampling/analyses were noted or undertaken in these areas?	Text will be added to Section 3.1.2 to describe additional observations in the trenches reported in the EDI Hydrogeological Investigation Report, that fine layering of silt and clay in the lacustrine sediments was observed in the trench wall, and that the depth to ground water varied in the trenches.	Text was added to Section 2.1.2 (instead of 3.1.2) on page 34.

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56	p. 6	Page 36: The text indicates that wells WT-10 to WT-15 "...were installed in the area of the IWT plant to provide additional information on the distribution of VOCs, oil and PCBs.." However, Table 3-10 indicates that these wells have not ever been sampled for PCBs. The report needs to be revised to correct this inconsistency. If the wells were sampled for PCBS, data needs to be presented. Otherwise, the wells need to be sampled.	Soil samples from the monitoring well soil borings were analyzed for PCBs and oil, and ground water samples were analyzed for VOCs. The text in this section will be revised to indicate that the wells were installed to provide information on the distribution of VOCs in ground water. The text in Section 2.1.1 will be revised to indicate that the soil borings associated with these wells were installed to provide additional information on the distribution of PCBs and oil in soil, and VOCs in ground water. A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions.	Page 29 and page 43
57	p. 6	Page 37: Did the 1986-1987 OBG soil boring results confirm the location of the buried drainage swale? In regard to the former swale system which discharged to Ley Creek, the sampling to date is limited to the downstream portion of this system. Additional sampling of the southern portion of the swale is warranted based upon the significant levels of contamination which may be present and the area's potential for further release.	The 1986-1987 soil borings at the Ley Creek PCB Dredgings site confirmed the location of the swale. The 1990-1991 O'Brien & Gere soil borings installed to identify the limits of the Ley Creek Relief Interceptor Sewer IRM confirmed the location of one former drainage swale just south of Factory Avenue. As discussed previously, historical drawings and aerial photos indicate the presence of two drainage swales in the northern property area, one of which continued to Ley Creek. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	Section 3 includes a discussion of the results of trenching performed during the SRI to locate the swale.

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58	p. 6	Page 42: The report needs to be revised such that it provides the groundwater sampling methodologies used in each of the investigations. This is important for data interpretation.	To the extent available in previous documents and based on GM input, ground water sampling methodologies will be included in a revised document.	The ground water discussion has been revised to reflect current ground water conditions, thus, text referring to historical ground water sampling has been deleted.
59	p. 6	Page 47: *2nd Bullet:* A hydro punch location (HP-4) is also indicated on figure 2-6. Were any samples of GW taken? If so, the data needs to be included. If not, why not? This leaves a major data gap in regard to determination of the extent of the BTEX plume, if data were not collected.	A bullet will be added to indicate that dry conditions prevented the collection of ground water samples at HP-1, HP-3, and HP-4.	The ground water discussion has been revised to reflect current ground water conditions, thus, text referring to historical ground water sampling has been deleted. SRI ground water sampling methodologies are discussed in Section 2.
60	p. 6	Page 48: 1st bullet: Where is the pH data for the P-13 well? Was it indicative of acid having reached the well?	A sentence will be added in Section 3.3 to report that the pH value of 9.2 was measured by CRA in well P-13 in August 1995 during the Phase II ESA, which is not indicative of acidic conditions.	The ground water discussion has been revised to reflect current ground water conditions, thus, text referring to historical ground water sampling has been deleted.

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61	p. 6	Page 49: *Storm Outfall Assessment.*- Figure 2-12 does not indicate the storm sewer sampling locations. This is a problem throughout the section. Are sediments known to be, or believed to be, present in any of the on-site sewers? If so, have the sediments been sampled and what was the resultant data?	The text will be corrected to refer to Figure 1-8, which depicts the sewer sample locations. Television inspection of the storm sewer leading to Outfall 004 in September 1992 indicated the presence of debris deposits on the bottom of the pipe in some piping runs. Sediment is likely present in the sewers leading to Outfall 003, as well. As discussed in Sections 2.3.2 and 3.4.1 (pages 54 and 82-83), sediment in the Outfall 003 sewer pipe north of Factory Avenue was sampled as part of the Ley Creek PCB Dredgings site RI. Other sewer sediment has not been sampled.	Figure referenced on Page 52 No other text revision
62	p. 6	Page 51: The report must provide the rationale used for selecting the metals which would be analyzed.	The text will be revised to indicate the rationale for the metals analyzed. During the first storm event, storm water samples were analyzed for a complete scan of 129 EPA priority pollutants. Analyses during subsequent storm events were based on the detections during the first event, as well as historic constituent information for the former IFG facility (previously detected or potentially discharged).	Page 55
63	p. 6-7	Page 57 and 58: *Ley Creek Sampling Program:* What method was used to qualitatively screen the sample for various Aroclors? There is no apparent discussion of methods in the referenced EDI 1985b report. Were any confirmatory samples submitted to the laboratory to be run for all Aroclors to serve as a check on the screening process? This also applies to the sediment and fish samples collected by EDI during the same program.	The EDI Report does not indicate the analytical methods used for qualitative screening or quantitative analyses. However, as documented in the RI/FS Work Plan for the Ley Creek PCB Dredgings site (O'Brien & Gere 1992), NYSDEC agreed that data from this study would be incorporated into the RI to limit the scope of further investigatory activities. This text is the same as what was included in the RI Report for the Ley Creek PCB Dredgings site, when surface water, sediment, and fish were part of the scope of that investigation.	To provide the latest sediment conditions in Ley Creek, the SRI presents the latest data collected in 1996, 1998 and 1999. Hence, 1985 data is not presented.

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64	p. 7	Page 67: *Manufacturing Building Subsurface:* What depth are/were the sumps and tanks located? Were the boring and samples taken at or below this depth? What criteria was used to determine sampling points?	Hydraulic oil sump and tank depths are presented in Attachment 1. Soil borings were installed within 3 ft of the sump or tank in an attempt to examine soil conditions within the bedding material areas around the sumps. Borings were installed to the approximate depth of the bottom of the sump or tank, and one soil sample was collected from each boring from near the base of the bedding material.	Page 72
65	p. 7	Were soil cuttings used to backfill all of the soil borings drilled within the Main Manufacturing Building?	Soil cuttings were backfilled in the soil borings in the manufacturing building during the Phase II ESA.	No revision
66	p. 8	What rationale was employed in selecting soil boring depths and sampling intervals? For instance, why weren't soil samples collected south of Oil Sump J or north of Oil Sump L?	The objective of the Phase II ESA was to confirm or deny a release from each potential area of contamination (PAOC). Soil borings were installed within 3 ft of each hydraulic oil sump or tank to the approximate depth of the bottom of the sump or tank, and one soil sample was collected from the bottom interval of each boring.	Page 72
67	p. 8	The log for borings BH-13 indicates that concrete may have been encountered at a depth of 7.4 feet. Might this concrete be the base of Sump H or might it be related to the nearby Dirty Oil Transfer Station (DOTS)? Was the DOTS an above ground or below ground facility? What is the likely cause of the elevated (5 ppm) PID reading at the base of the boring?	The concrete encountered in boring BH-13 was likely associated with Sump H because the hydraulic oil sumps are bell shaped and have concrete footers that extend horizontally beyond the base of the sump. The dirty oil transfer station is an above-ground structure which is still present in the manufacturing building. The PID reading was likely associated with the TCE detected in other soil samples in that area.	No revision

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68	p. 8	The log for boring BH-15 indicates that concrete was encountered at a depth of 7.4 feet. Might the concrete be the base of Sump I? Table 2-1 should be revised to indicate that the actual sampling interval was 7.0 to 7.4 feet. This type of change should be made for the other samples, as appropriate.	The concrete encountered in boring BH-15 was likely associated with Sump I because the hydraulic oil sumps are bell shaped and have concrete footers that extend horizontally beyond the base of the sump. The sampling intervals will be revised appropriately.	Table 2-1
69	p. 8	The text should be revised to address all of the locations where concrete appears to have been encountered during drilling.	In addition to borings BH-13 and BH-15, concrete encountered in borings BH-11, BH-19, BH-23, BH-25, and BH-42 was likely associated with the sump footers. Concrete encountered in boring BH-24 was likely associated with the footer of Tank N, and the concrete encountered in boring BH-52 was potentially associated with the vault of a water tank located in that area.	No revision
70	p. 8	Considering the locations of the various hydraulic oil sumps and tanks throughout much of the building area, why weren't PCBs included in the analyses for all of the soil samples collected within this area?	Based on the sampling/analytical rationale for the Phase II ESA, each sample was analyzed for the parameters associated with the potential source area it was installed to investigate. Consequently, samples collected in the vicinity of plating sumps and the paint room were not analyzed for PCBs because PCBs were not associated with these processes.	No revision

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71	p. 8	Page 68: Electroplating Sumps: *2nd paragraph:* The 1996 borings, indicated on Figure 3-5 as BH-46 and BH-47 are not east and west of the cyanide sump #3. Rather, the borings are approximately 100' or more southwest of Cyanide sump #3. It appears appropriate to have sampled for cyanide in this area yet this was not done. Please provide the rationale for this.	The location of cyanide sump #3 appears to be wrong on Figures 2-2 and 3-5. GM historic drawings will be reviewed to verify that cyanide sump #3 was actually located in the vicinity of BH-9. BH-9 was the first boring installed during the Phase II ESA to evaluate cyanide sump #3, and the sample from this boring was analyzed for cyanide. Cyanide was not detected in that sample, but chromium, copper nickel, and TCE were detected in this sample at concentrations above NYSDEC TAGM 4046 screening levels. Borings BH-46 and BH-47 were subsequently installed to further evaluate chromium, copper, and nickel concentrations presumably associated with cyanide sump #3, and TCE concentrations presumably associated with the former paint shop.	The CRA drawings and facility drawings have been reviewed. On SRI figures, the sump locations are from facility drawings and boring locations are from the CRA reports.
72	p. 8	Page 68: Electroplating Sumps: *3rd paragraph:* These borings are also not "near" cyanide sump #3, as discussed above.	The location of cyanide sump #3 appears to be wrong on Figures 2-2 and 3-5. GM historic drawings will be reviewed to verify that cyanide sump #3 was actually located in the vicinity of BH-9.	The CRA drawings and facility drawings have been reviewed. On SRI figures, the sump locations are from facility drawings and boring locations are from the CRA reports.

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73	p. 8	Page 68: Electroplating Sumps: These sumps were indicated in Section I to be connected by trenches. These trenches should be indicated on the figure. Were these sumps connected to piping or trenches? If so, what was the layout of such? Many borings from which the samples were taken are seemingly upgradient of the sumps which were supposedly being investigated. Rationale for doing so is not given. The paint room sump was not investigated at all. Rationale is not given for why samples were taken at only certain depths. How deep were the sumps? Were the samples taken at depths at or just below the bottom of the sump? The die casting sumps and trenches are not depicted, nor is there evidence that the die-casting area was appropriately sampled. This information needs to be provided in the report.	Sumps were not connected to each other by trenches; trenches surrounded equipment, and each trench led to a sump. Phase II ESA borings were intended to be placed adjacent to each sump. The paint room sump was not investigated during the Phase II ESA because it was inaccessible to a drill rig. Samples were intended to be collected from the borings installed to investigate plating sumps at the approximate depth of the sump (up to 5 ft). Soil samples were collected from these borings at the fill/native soil interface, which in some cases was relatively shallow. As previously discussed, die casting sump and trench locations are available on layout drawings, and will be presented in a revised document.	Layout drawings depicting the former trenches associated with the electroplating operations were not located.
74	p. 8	Page 68: *Former PCB oil USTs:* Were the soil samples for PCBs taken below the depth of the former tank location? Were there any confirmatory samples taken when the tanks were removed? If so, this data needs to be presented.	Soil samples were collected below the approximate depth of the bottom of the USTs, 5 ft bgs. The tank located inside of the building is believed to have been moved to the location outside of the building. The tank may have been removed from the second location, but there is no documentation of removal or that confirmatory samples were collected.	Page 74

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75	p. 9	What level of confidence does GM have regarding the actual locations of the former PCB oil USTS? Has GM interviewed former employees to aid in identifying the locations?	No historic drawings are available which indicate the location of the tanks. Boring locations were based on employee recollection. Five former plant engineering employees have been interviewed related to the tank location. GM has a high level of confidence regarding the indoor tank location, based on consistent recollections of its location inside a former doorway. The exact location of the outdoor tank is less clear, although plant personnel recall that the tank was never used at its second location.	No revision
76	p. 9	Page 68: *Paint Room:* Why were no samples taken in the Paint room or near the paint room sump? The borings north of the paint room were shallow (1-2'). Why weren't samples taken for VOC's at depth (>6')? Appropriate rationale needs to be provided for not doing so, or data gathered to fill such gaps.	The paint room and paint room sump were not investigated during the Phase II ESA due to inaccessibility to a drill rig. The borings north of the paint room were installed to investigate the plating sumps, not the paint room. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	Additional borings installed as described on Page 32
77	p. 9	Why weren't any of the soil samples collected from the Manufacturing Building analyzed for SVOCs?	The objective of the Phase II ESA was to confirm or deny a release from each potential area of contamination (PAOC). Based on the sampling/analytical rationale for the Phase II ESA, each sample was analyzed for the parameters associated with the potential source area it was installed to investigate. For evaluation of potential releases from PAOCs inside the manufacturing building, SVOCs were not identified as target analytes for the purposes of the Phase II ESA.	SVOCs analyses conducted in SRI, as discussed in Section 3.

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78	p. 9	Why weren't cyanide analyses performed on all soil samples collected in the vicinity of the cyanide sumps?	Cyanide analyses were performed on soil samples collected from each of the initial borings installed to evaluate the cyanide sumps. Cyanide was not included in the analysis for samples from borings BH-46 and BH-47, installed near cyanide sump #3, because cyanide was not detected in boring BH-9, the initial boring installed adjacent to cyanide sump #3.	No revision
79	p. 9	In regard to the storm sewer sampling program, how was it determined which system was to be sampled? How were the boring locations established? Why weren't the other systems beneath the Manufacturing Building also addressed? To what extent might the PCBs be related to SAE 3OW oil? Might they have been used in similar applications? This information is to be provided in the report.	This portion of the inactive storm sewer was selected for investigation in 1996 because: • it is the portion of the storm sewer leading to oil/water collection sump #5, in which an oil layer was present, and • based on its proximity to total petroleum hydrocarbons detected in soil samples collected in the fill surrounding abandoned hydraulic oil sumps during the 1995 sampling activities. PCBs are likely related to the SAE30W oil, which is likely mineral oil used after changeover to Pydraul. Systems were not cleaned out following the changeover from Pydraul to mineral oil, and concentrations observed are consistent with low level PCB contamination in mineral oil rather than high PCB concentrations in Pydraul.	Page 24

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	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
80	p. 10	*Former Thinner Tanks Area:* Why was HP-4 only analyzed for Oil & Grease? HP-5 soil results do not show up on Tables 3-3 thru 3-6 although the text indicates analyses for PHS, PCBS and VOCs. Table 2-1 indicates only PCB analyses. This inconsistency needs to be addressed appropriately.	Table 2-1 will also be revised appropriately. The fill/soil sample from HP-4 was analyzed for PCBs, petroleum hydrocarbon scan, and VOCs. Analytical results for HP-4 were inadvertently omitted from Tables 3-3 (PCBs) and 3-6 (VOCs). Neither PCBs nor VOCs were detected in the sample. The soil sample collected from HP-5 was labeled HP-BH-5. Analytical results for HP-BH-5 were inadvertently omitted from Tables 3-3 (PCBs), 3-4 (petroleum hydrocarbons), and 3-6 (VOCs). PCBs were detected in HP-BH-5 at 71 mg/kg; methylene chloride, acetone, and toluene were detected in HP-BH-5 at 16, 26, and 11J ug/kg; and petroleum hydrocarbons were not detected.	Tables 2-1, 3-5B, and 3-8B
81	p. 10	The text and the appendices are confusing as to the hydro punch results for this area. For instance, the text discusses analytical results for a soil sample collected at HP-5. While Table 2-1 indicates that a soil sample was collected at HP-5, Exhibit J indicates that only a water sample was collected at this location and hence does not provide soil analytical results for HP-5. This is supported by the boring log for HP-5 which suggests that a groundwater sample was collected at this location. Is this correct? If so, the report needs to be revised accordingly. The report should also provide information as to the depth from which the HP-5 groundwater sample was collected. In addition, while Exhibit J provides analytical results for a soil sample which was collected from nearby hydro punch location HP4, the results were neither provided in the text nor in Table 2-1.	The text and tables will be revised to correct the inconsistency. A ground water sample was collected from HP-5, and fill/soil samples were collected from HP-4 and HP-BH-5. Ground water samples from HP-2 and HP-5 were collected at depths of 12 to 14 ft bgs and 19 to 21 ft bgs, respectively.	Table 2-1

	Previous Investigation Rationale/Clarifications			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
82	p. 10	*Page 72: Northeast Property Area:* How deep is the Acid Alkali sump below ground surface (bgs)? Did this sump ever overflow? A soil sample to analyze for PCBS, metals, cyanide and VOC's (or anything else that may have gone to the sump) down gradient of this sump should be taken. The text indicates that VOC'S, SVOCs and cyanide were not detected. However, Table 2-1 indicates that these parameters were not analyzed. The report must correct these inconsistencies.	The acid/alkali bunker/IWT sump is approximately 7.5 ft in depth. Prior to the early 1980's, an overflow pipe from the IWT sump connected to the storm sewer leading to the lagoon/impoundment. In the early 1980's, the overflow pipe was plugged and a containment area was constructed to contain IWT sump overflow, which would be pumped out by a tanker in an overflow event. Boring HA-2 was installed during the Phase II ESA in an area of oil staining adjacent to the acid/alkali bunker. Table 2-1 will be revised to indicate that the sample from HA-2 was analyzed for VOCs, SVOCs, PCBs, RCRA metals, cyanide, copper and nickel.	Table 2-1 and Page 89
83	p. 10	*Northern Property Area:* Is P-6 the only area from which a soil sample was taken in the area of the construction debris? When was the construction debris disposed? What area of the plant did it come from? Given the nature of plant operations, why wasn't the soil/fill analyzed for other parameters such as metals?	In addition to P-6, some of the borings installed during the Phase II Hydrogeological Investigation for the purpose of investigating the former drainage swale (003-1 to 003-11) may have been placed in the general fill area. Additionally, the borings installed prior to the Ley Creek Interceptor Sewer soil removal IRM (B-1 to B-18), and the NIMO borings (35, 36E, 36C, 36W, 37E, 37C, 37W, and 38) may be in the general fill area. The source of fill material placed in the northern property area was material excavated as part of building addition and other construction projects in various parts of the facility. Monitoring well P-6 was installed for the purpose of ground water evaluation during the Hydrogeological Investigation. During the boring installation process for the wells, soils were examined for oil contamination, and selected soil samples (including P-6) were submitted for PCB analysis.	No revision

	Previous Investigation Rationale/Clarifications			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
84	p. 10	*Northern Property Area* All of the analytical results for this area, as well as the other facility areas, should be provided in tabular form in the report.	Soil data for detected constituents are presented in Tables 3-3 through 3-7. Each table is for a different constituent group, and within each table, the data are grouped by property area. GM will work with NYSDEC to modify this format, if necessary, for submittal of the revised report section.	Section 3 data tables
85	p. 10	Based on a review of Table 3-3, it is not clear as to whether some samples were only analyzed for a limited number of Aroclors. For example, does the N/A designation for the B-2 soil samples mean that a given Aroclor was not analyzed for or that it was analyzed for but not detected?	Certain data were reported as total PCBs, without Aroclor-specific identification or quantitation. Other data were reported as total PCBs with Aroclor identification, but not Aroclor-specific quantitation. Newer data were reported quantitatively for each Aroclor. Therefore, the N/A designation in the Aroclor columns was meant to indicate that Aroclor-specific quantitation was not performed. Table 3-3 will be revised to clarify the data.	Table 3-3 has been eliminated from the report. PCB analytical data are presented in Table 3-5.
86	p. 11	Since the drainage swale has not been delineated north of Factory Avenue, the discussion of the soil samples collected from the area north of Factory Avenue should be revised to state that the PCB results for these samples "..were not as elevated as those observed in the vicinity of the former drainage swale..".	This discussion will be revised to reflect the current understanding of the drainage swale configurations, as discussed previously in these responses, and will incorporate NYSDEC's revised language.	Page 96
87	p. 11	Page 75: *On-site Landfill:* What rationale was employed in determining the locations of the landfill borings? Why were all of the borings performed in the south and southeast portion of this area? A more comprehensive characterization of contaminants in this area appears warranted.	These borings were placed in the vicinity of the landfill, and were limited to the south and southeast areas due to the presence of the high voltage power lines over the other landfill areas.	The trenching activities and surface soil sample collection in the area of the on-site landfill were included as part of the 1999 SRI. Results discussed on page 96.

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	Previous Investigation Rationale/Clarifications			
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88	p. 11	Page 76: Considering that it takes place in the discussion of VOCs, what is meant by the reference to "floating oil"?	The discussion of these trench results will be moved to a new subsection of the ground water data section entitled "Other Data," so as not to associate the non-detected oil with a certain contaminant class. The pH data for well P-13 and SVOC data will also be addressed in this new subsection.	The ground water section has been rewritten to reflect the latest ground water conditions.
89	p. 12	Page 80: The discussion of each group of samples should be modified to state whether the samples were "total" or "filtered".	The discussion in Section 3.3.3 will be revised to indicate that the inorganic data discussed were total concentrations, with the exception of CRA's sample data which were filtered concentrations.	With the exception of samples collected from OBG-13 and OBG-15, new ground water data were submitted for unfiltered analysis. Both filtered and unfiltered analyses were submitted for these locations. The data discussion and the data presented on Figure C-6 are the unfiltered data.
90	p. 19	It appears that some of the information in Table 2-1 may be inaccurate. For instance, while the text indicates that VOCs were analyzed for in the BH-47 and HA-1 soil samples, the table indicates otherwise. Similarly, the text's statement that analyses of HA-7 and HA-8 soil samples included SVOCs is not supported by Table 2-1. The analysis column for <u>all</u> samples should be reviewed and the necessary changes made. In addition, the meaning of "composite" as used in the table (e.g. BH-47) is unclear. Does it mean that samples from the 4.0 - 6.0 feet, 7.0 - 9.0 feet, and 15.0-16.0 feet intervals were composited into a single sample? What is the purpose of assigning the "bgs" code to <u>some</u> of the soil <u>analyses?</u>	There are several errors in the analyses column of Table 2-1 which will be revised for the next submittal. Further, the notes for COM and bgs were intended simply as definitions and should not have been numbered 1 and 2, nor subsequently listed in the analyses column.	Table 2-1

	Geology/Hydrogeology			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
95	p. 7	Page 65, 66: The revised report should include at least two additional cross sections which depict subsurface conditions at the site. These should include a north-south trending cross section which portrays conditions beneath the former surface impoundment area, the Main Manufacturing Building, and the Industrial Waste Treatment Plant as well as an east-west trending cross section which portrays conditions beneath the area of the thinner spill, the Main Manufacturing Building, and the Administration Building.	The two additional cross-sections will be developed for the Supplemental RI Report based on existing and Supplemental RI data.	Figures 2-2, 3-2A and 3-2B
96	p. 7	The revised report should discuss how vertical gradients vary across the site.	The Supplemental RI Report will include a discussion of how vertical gradients vary across the site. The discussion will pertain to the glaciolacustrine overburden materials in which most of the existing site wells are screened.	Page 69
97	p. 7	The discussion of the flow calculations should indicate the values used for effective porosity.	An effective porosity value of 0.35 was used in the evaluation of horizontal ground water flow velocity. This will be noted in the Supplemental RI Report.	Pages 69 and 70
98	p. 7	Were the triaxial tests for vertical hydraulic conductivity performed on relatively undisturbed soil samples? This needs to be addressed in the report.	As discussed in Section 2.1.3, undisturbed samples of lacustrine deposits and relatively undisturbed samples of lodgement till were collected for triaxial testing. This will also be noted in Section 2.2.3 and 3.1.3.	Page 48
99	p. 7	The text needs to address the possibility that building construction or other facility operations may have influenced the integrity of the glaciolacustrine unit.	Manufacturing building caissons extend to depths of 19 to 24 ft. These caissons were, in some cases, installed to the top of the till. It is unlikely that the caissons penetrated the till layer.	No revision. The depth of till was observed to be approximately 15 feet below grade. It is possible that the caissons penetrated the till layer.

	Geology/Hydrogeology			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
100	p. 7	The revised report should include maps which portray the upper surfaces of the glaciolacustrine and glacial till units.	The Supplemental RI Report will include a map that portrays the elevation of the upper surface of the glaciolacustrine and lodgment till units based on existing data.	Lodgement till upper surface included in Figure 3-1
101	p. 20	3-2, 3-3: The groundwater elevations maps (Figures 3-2 and 3-3) should be revised such that they identify the measured elevation value at each well location.	The ground water elevation maps will be revised to note the elevations at each well used to prepare the maps.	Figures 3-3 and 3-4

	Data Evaluation/Interpretation			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
102	p. 11	In light of the extremely high chlorinated hydrocarbon concentrations, the report needs to address, in detail, the possibility that Dense Non Aqueous Phase Liquids (DNAPLS) may be present at the site. This is supported by the groundwater quality data for the areas in the vicinity of the Administration Building and Impoundment No. 2 where chlorinated hydrocarbon concentrations are frequently much greater in the deep wells than in the shallow wells.	Future documents will address the potential for DNAPL presence at the site.	As described on Pages 32 and 33

	Data Evaluation/Interpretation			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
103	p. 11	Chapter 3 needs to include discussions regarding the likely sources for the contamination detected in the various media at the site. This applies to all suites of contaminants present at the site.	Potential sources of contamination will be discussed in the Supplemental RI Work Plan and RI Report.	Data are presented by suspected source area in Section 3. Suspected sources, where appropriate are also discussed with relation to ground water discussions in Section 3.
104	p. 12	Page 79: *PCBs:* The MW-2S results should not be considered anomalous, since the September 1997 data for MW-2S indicated a level on the same order of magnitude. What is the possible source for this contamination? Contamination beneath the building? The former lagoon area beneath the building addition? What is the extent of the plume?	The October 1997 data for well MW-2S indicates PCBs at a concentration of 9,200 ug/l. The text will be revised to indicate that concentrations have generally remained the same with minor fluctuations, with the exception of recently increased PCB concentrations at MW-2S. It is likely that the source of PCBs in this well is from the portion of the former lagoon which was covered as part of the 1974 building addition, because the well is believed to be screened in former lagoon materials. The PCBs are therefore not necessarily part of a plume, but may represent a source area. Collection of current site-wide ground water data will be included in the Supplemental RI Work Plan.	A discussion of current ground water conditions is presented in Section 3.
105	p. 12	Based on the data for some of the more highly contaminated (with PCBs) samples, there is a very high likelihood that PCBs are present in the vicinity of some of the wells as a Non Aqueous Phase Liquid (NAPL). The report needs to address this in detail.	The Supplemental RI Work Plan and RI Report will address the potential for PCB NAPL presence at the site.	The presence of NAPL was investigated during the SRI. Discussed on pages 30, 31, 32, 37, 70, 74, 75, 86, 107, 135 and results summarized in Table 3-3
106	p. 12	The text needs to note that the potential presence of PCBs in groundwater has not been addressed in several major portions of the site. Therefore, additional groundwater data is warranted.	Collection of current site-wide ground water data will be included in the Supplemental RI Work Plan.	Site-wide ground water data was collected during the 1999 SRI

	Data Evaluation/Interpretation			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
107	p. 12	The metals concentrations reported for the "filtered" HP-2 sample suggest that a significant metals problem may exist here and thus indicates that further investigation of this area is warranted.	Collection of current site-wide ground water data will be included in the Supplemental RI Work Plan.	Metals data for ground water was collected during the 1999 SRI.
108	p. 12	The text should provide a brief discussion of trends noted in the quarterly data which were collected from the surface impoundment wells between the September 1988 and Fall 1997 sampling events.	A trend discussion for surface impoundment monitoring data will be included in the Supplemental RI Report.	The ground water discussion has been revised to reflect current conditions, thus data discussions are limited to the latest data collected in 1999
109	p. 12	Page 80: Section 3.3.3: The text needs to state that the metals data for much of the site are sparse and that further sampling will be necessary to identify those areas where metals in groundwater are an issue. For instance, since Table 3-11 indicates that the referenced 1985 Hydrogeological Investigation included metals analyses for only three of the greater than 20 shallow monitoring wells (present at that time) at the site, the potential impacts of metals to groundwater has not been adequately addressed. More comprehensive sampling is warranted.	Collection of current site-wide ground water data will be included in the Supplemental RI Work Plan.	Metals data for ground water was collected during the 1999 SRI.
110	p. 12	Page 81: *Main Storm sewer system:* Given the proximity of the sewer to areas (general storage pad, IWTP, power plant) that may have contributed contamination through surface spills/runoff, the statement that constituents in the sewer are likely from off-site contributions appears inappropriate.	The text will be revised to indicate that constituents in manholes S1 and S3 are likely related to off-site contributions. Manholes S2 and S4 receive facility runoff.	Page 114
111	p. 12	The text needs to address whether groundwater impacted by site activities may have contributed to the contamination in the sewers.	Ground water infiltration is a likely pathway of migration to the on-site storm sewers. The revised report will address this issue.	Page 116

	Data Evaluation/Interpretation			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
112	p. 12	Page 82: In regard to the first bullet, the data do not preclude the potential for a PCB source in the more downstream portion of the system (along the west and northwest sides of the building).	The text will be revised to reflect that the potential for a source in the downstream portion of the system was not ruled out by the data.	Page 114
113	p. 12	The text needs to also discuss SPDES results for samples collected during the facility's active operation (prior to January 1994). As a related issue, note that the first statement of the final paragraph is incorrect if pre-1994 contaminant levels exceeded the applicable discharge limits.	A discussion of historic SPDES data will be included in the Supplemental RI Report.	SPDES data will be provided under separate cover, if the Department still needs this information. Correction regarding detections below effluent limits prior to 1994 made on page 115.
114	p. 13	Page 84: *Main Storm Sewer system:* Last sentence in section. Is the main area of PCB contribution in the southwestern corner as stated, or rather, the eastern corner of building? Has there been recent sampling to indicate that the eastern side of the building is not a contributor?	Based on the historic sample data referenced, the main source appeared to be on the southwest portion of the building. Recently, in an isolated event, oil was observed in Outfall 003, and the source of the oil was found to be subsurface oil contamination in the vicinity of oil/water collection sump #5 in the eastern portion of the Outfall 003 storm sewer system. Piping connecting the inactive storm sewer system to oil/water collection sump #5 was installed through an active storm sewer manhole just west of oil/water collection sump #5 (not indicated on Figure 1-8). Oil migrated into this manhole through deteriorated grout around the piping penetrations. Repairs were made to the manhole to eliminate the migration.	No revision
115	p. 13	The text needs to state the means for identifying the locations of the "main contribution". Were flow values measured at the time of sampling so that contaminant mass loadings could be established for each of the sampling locations?	Flow was only observed qualitatively; the text will be reworded to clarify where the highest concentrations of PCBs and TCE were in the Outfall 003 line.	Page 114

	Data Evaluation/Interpretation			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
116	p. 13	All of the discussion of the surface water sampling events should be revised to also describe the locations of the samples relative to Outfall 004. This is important to the interpretation of the data.	The text will be revised to include Outfall 004 as a reference point, in addition to Outfall 003.	Page 118 Tables 2-6 and 2-7
117	p. 13	Page 86: The discussion of the 1988-1989 OBG data needs to be revised. More specifically, the reference to the 1985 Consent Order PCB limit needs to be deleted, as the limit is not comparable to a concentration in a surface water sample.	The reference to the 1985 Consent Order PCB limit will be deleted from the paragraph.	Deleted
118	p. 13	The report should provide greater detail regarding the number of samples in which PCBs were detected, and the dates on which these samples were collected. Where in Exhibit D are the PCB results presented?	The RIBS surface water data for PCBs was inadvertently omitted from Exhibit D, but are summarized in Table 3-15. The samples were collected at the Park Street Bridge between March and July 1990. Sample collection dates will be added to Table 3-15, and the data will be included in Exhibit D.	To provide the latest surface water conditions in Ley Creek, the SRI presents the latest data collected in 1996, 1998 and 1999. As such the 1990 data is not included in the SRI.
119	p. 13	Page 94: The significance of the PCB results for L7 need to be addressed in the final paragraph of this section.	As part of the Supplemental RI, GM will conduct a sediment probing program to identify depositional areas, and conduct additional sediment sampling activities. In the Supplemental RI Report, we will evaluate the significance of the data set as a whole.	Deleted text on page 123 referring to PCB concentrations downstream. Sediment probing: Page 62

	SWMUs			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
120	p. 4	Page 13: *RCRA:* RCRA Closure of the remaining SWMUs and AOCs is still an issue that needs to be resolved. The RI/FS report must indicate how the areas have been investigated to determine whether a release has occurred and the extent of any release, along with a description of the cleanup appropriate for closure. Appendix A information is not sufficient for this need. Closure Plans which were pending prior to this order need to be revisited to ascertain whether the intended investigatory and cleanup work has been performed. Closure work which would have been necessary must also be indicated as performed appropriately or described in detail as to how such will be performed.	Appendix A will be expanded to provide a clearer explanation of the SWMUs and their status. Many of the SWMUs are aboveground structures which were or are to be addressed as part of facility decommissioning efforts. There was only one closure plan pending prior to this order for Drum Storage Area No. 1. The intended investigatory work will be incorporated into the Supplemental RI Work Plan, and cleanup work into the remediation program.	Appendix A
121	p. 22	RCRA SWMUS: The DEC has not received the appropriate information/documentation indicating that GM has performed any of the SWMU/AOC investigations specified in the draft PART 373 permit. If GM has performed the necessary investigative and closure activities, those activities should be throughly documented in the RI/FS. If such activities have not been performed, the necessary work plans to do so are to be submitted and reviewed by the Department and the activities appropriately performed under oversight by the DEC.	It is GM's desire to develop a site-wide investigative/remediation strategy. As identified previously, Appendix A will be expanded to provide a clearer explanation of SWMUs and current status.	Appendix A

123	Remedial/Decommissioning Efforts			
124	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
125	p. 13	Page 99: *Ley Creek Interceptor Sewer IRM:* A figure depicting the area of excavation should be included. A reference in Section 3 to the fact that this soil has been removed should be included. Locations of the confirmatory sampling and the resultant levels of PCB and chromium should be included as part of Section 3.	The requested information will be included in the revised report.	Page 94 and 95. Exact locations of the confirmatory samples are not available. The general excavation location is depicted on Figures 3-11 and C-1.
126	p. 13	Page 102: *Decommissioning activities:* Since the decommissioning/deactivation activities are considered a form of remedial action or may also be considered IRMs, all proposals/workplans are to be submitted to the DEC for review. Many of these items are for deactivating RCRA SWMUs, and as such, these actions fall under the purview of the September 1997 Order, and must be reviewed and approved by the DEC.	Future decommissioning plans will be provided to NYSDEC for review and approval.	No revision
127	p. 13	Information regarding the nature and distribution of contamination in the areas to be decommissioned may be important for understanding potential contaminant sources, pathways, etc. in these areas. Therefore, GM should submit a plan for a pre-decommissioning sampling program so that the necessary data may be gathered.	A pre-decommissioning sampling program was performed as part of a 1995 facility assessment. The results of this sampling were used to identify decommissioning tasks. As discussed in Section 4.2, many decommissioning tasks have already been performed.	No revision
128	p. 13	GM should provide copies of the work plans,. design documents etc. and the resulting reports for the decommissioning work which has been performed thus far.	Available documentation related to facility decommissioning is outlined in Attachment 4. Facility data have been available for NYSDEC review at the former IFG facility. If NYSDEC is interested in receiving copies of particular information, GM will provide it.	No revision

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	Supplemental RI			
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129	p. 9	*Page 69: Abandoned Storm Sewer Trenches:* The only storm sewer area sampled was near the SW area of the building (previous area of the 500 series molders). Although this is likely the major source area for PCBs, the other "Abandoned storm sewer systems" and preferential pathways beneath the building need to be evaluated. Unless integrity of the former sumps and trenches can be proven, the other areas of the plant where hydraulic fluids with PCBs were used, must be evaluated.	This portion of the inactive storm sewer was selected for investigation in 1996 because: • it is the portion of the storm sewer leading to oil/water collection sump #5, in which an oil layer was present, and • based on its proximity to total petroleum hydrocarbons detected in soil samples collected in the fill surrounding abandoned hydraulic oil sumps during the 1995 sampling activities. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	No revision
130	p. 9	Page 69-70: *Southeast area:* S-13 is not depicted on the Figure 2-3. Shallow and surface soil samples need to be taken in this area around the storage pad to identify contamination that may have spilled from the area. It is more likely to be higher at the surface than 6-8' feet below grade. How is the pad constructed? Is it level? Is there a containment structure?	S-13 will be added to Figure 2-3. Surface soil sampling will be conducted as part of the Supplemental RI. The storage area consists of a concrete storage pad area and a gravel general area, both level at grade. There is no containment structure.	Figures 3-7A, B, C and C-1.
131	p. 9	Page 70: *IWT Plant:* GW issue: Given the proximity of the WT wells to the IWTP and PCB hot area, and the VOC's in the wells; these wells need to be sampled for PCBs.	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions.	A site-wide ground water sampling program was implemented as part of the 1999 SRI.

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	Supplemental RI			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
132	p. 9	*Incinerator Area:* The sample at HA-12 was taken 11-12 feet below grade. Surface/shallow samples need also to be presented. Also, sampling for dioxins and furans should be included due to the possible nature of the waste incinerated.	Surface/shallow samples were not collected for analysis from boring HA-12. A surface soil sampling program will be presented in the Supplemental RI Work Plan. Based on a review of historical information at the plant site, combustion related operations were primarily related to an on-site incinerator and boiler. As is typical of boilers or incinerators , these operations may have resulted in the formation of CDD or CDF congeners. Incineration of PCBs primarily results in the formation of CDFs rather than CDDs; the potential yield of CDFs depend on the specific conditions in the incineration operations. It is important to recognize that CDDs /CDFs are formed as a result of almost all common incineration/combustion processes, and are ubiquitous in soils and other environmental media, particularly in industrialized areas. Therefore, if CDD / CDF concentrations are detected in plant soils, attribution of these levels to specific heat related operations at the plant would be difficult in light of the levels which are expected to occur due to other common and widespread anthropogenic sources. Based on these considerations, it is our opinion that the project should not focus on CDD/CDFs to evaluate the nature and extent of contamination at the plant site.	Surface soil samples were collected in the IWT plant area during the SRI. Dioxin data was collected in the vicinity of the former on-site incinerator during the SRI. Figures 3-7A, B and C and C-2

	Supplemental RI			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
133	p. 9	Page 71: *S02 Scrubber Area:* Boring HA-11 was only sampled and analyzed for metals. Given the proximity of this boring to the TCE storage area, VOCs should also have been part of the analysis.	Based on the sampling/analytical rationale for the Phase II ESA, each sample was analyzed for the parameters associated with the potential source area it was installed to investigate. Consequently, this sample collected in the SO2 scrubber area was not analyzed for VOCs because VOCs were not associated with the process. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	No revision
134	p. 9	*Fuel Oil USTS:* What sampling, if any, was done near the former fuel oil USTs located east of the IWT plant? When removed, was confirmatory sampling done? Was there any integrity testing of the tanks done? If not, this area needs to be appropriately sampled.	GM is currently trying to locate closure documentation in its files.	Closure documentation provided as Exhibit F.
135	p. 10	Page 73: *Former Drainage Swale:* The swale can still be a preferential pathway for contaminants off the facility proper. Additional soil sampling for PCBs, metals, and VOCs should be conducted along the full length of the swale.	GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	Investigated during the SRI Results discussed on page 93.

	Supplemental RI			
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136	p. 20	Based on a review of the report, it is clear that additional data will need to be gathered and evaluated in order to determine the nature and extent of contamination resulting from the various contaminant sources at the site. Such data will <u>also</u> need to be adequate for supporting the Feasibility Study. While the determination of data needs will be influenced somewhat by GM's responses to the RI comments, it is possible to at least identify some general data needs at this time. These are discussed below. Additional data needs will likely be identified based on GM's responses to the Department's comments on the RI/FS report.	Specific comments are addressed below.	See below
137	p. 20	Surface Impoundments: Wells, down gradient of the surface impoundments show an increase in VOC concentration based on routine required monitoring data. The down gradient edge of the plume needs to be defined as well as a determination made regarding the plume's source.	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions.	A site-wide ground water sampling program was implemented as part of the 1999 SRI.
138	p. 20	The area of the former impoundment now covered by the building has not been investigated to determine whether this area has contamination present, and whether it may be a continuing source for contamination to the groundwater.	GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	The former impoundment was investigated during the SRI. Results discussed on page 99.

	Supplemental RI			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
139	p. 20	Manufacturing Building: The extent of PCBs, heavy metals, cyanide and VOCs beneath the building in soil (including within/near former trenches, pits, sumps) and groundwater (there is no gw data provided) has not been determined. What is the condition of the former storm water sewer trench? How many areas of exfiltration (e.g. cracks, fissures, holes, etc.) exist and what, if any, contamination is exfiltrating from these areas?	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting. With respect to the abandoned storm sewers, it is apparent that ground water infiltrates these sewers because water continues to be collected from the oil/water collection sumps. Specific areas of infiltration are not known. Contamination in the storm sewer system does not originate from within the storm sewers; the source of contamination in the storm sewer system is oil contamination in the fill material adjacent to the pipe. Exfiltration from the storm sewers is therefore not a migration pathway of concern.	A site-wide ground water sampling program was implemented as part of the 1999 SRI. Soil/source area sampling is discussed in Sections 2.1 and 3.2. Storm sewers will be investigated during the upcoming Sewer Televising IRM described in Section 4.3.
140	p. 20	Additional soil and groundwater sampling will be necessary within the footprint of the Main Manufacturing Building. The purpose of this work is to better characterize the nature and extent of contamination and to identify all contaminant sources in this area. Laboratory analyses will need to be adequate for addressing all potential contaminants for the area. The sampling should address the various areas <u>including</u> the abandoned storm sewers (and their associated backfill materials), the sumps, trenches, and pits used for the manufacturing operations, the "oil sumps", and the Paint room.	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	A site-wide ground water sampling program was implemented as part of the 1999 SRI. Soil/source area sampling is discussed in Sections 2.1 and 3.2.

	Supplemental RI			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
141	p. 20-21	Additional soil and groundwater sampling will be necessary within the vicinity of the IWT, the Administration Building and the closed surface impoundments in order to better characterize the nature and extent of contamination and to identify all contaminant sources in these areas. As part of this, sampling will need to address the sources of PCBs and chlorinated solvents in these areas and the possibility that these contaminants are present as NAPLs. It will also need to address the reasons for the relative variations (as evidenced by the data in Figure 3-9) in the vertical distribution of chlorinated solvents in the groundwater system. Laboratory analyses will need to be adequate for addressing all potential contaminants in these areas.	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	A site-wide ground water sampling program was implemented as part of the 1999 SRI. Soil/source area sampling is discussed in Sections 2.1 and 3.2.
142	p. 21	Landfill: The report indicates that only a minimal amount of investigative work has been performed at the Historic Landfill. This includes the collection of a single groundwater sample and three soils samples from the southeast portion of the landfill. The analytical results for the groundwater sample (hydro punch HP-2) and the soil samples, as well as the unknown nature of the landfill warrants that further work be performed in this area. Therefore, additional soil and groundwater sampling will be necessary within the footprint of, and in the vicinity of, the landfill in order to better characterize the nature and extent of contamination and to identify all contaminant sources. Laboratory analyses will need to be adequate for addressing all potential contaminants for the area.	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	A site-wide ground water sampling program was implemented as part of the 1999 SRI. Soil/source area sampling is discussed in Sections 2.1 and 3.2.

	Supplemental RI			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
143	p. 21	Northern Property: The distribution of PCBs in the northern property area does not appear to be solely linked to the former drainage swale. Because of this, and to address the general filling which occurred in the northern portion of the facility, additional soil and groundwater sampling will be necessary within this area in order to better characterize the nature and extent of contamination and to identify any contaminant sources which may exist here. This will need to include soil and groundwater sampling in the more upstream portion of the swale system as only the downstream (northernmost) portion of the swale has been sampled previously. Laboratory analyses will need to be adequate for addressing all potential contaminants in this area.	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	A site-wide ground water sampling program was implemented as part of the 1999 SRI. Soil/source area sampling is discussed in Sections 2.1 and 3.2.
144	p. 21	IWT Plant: Surface soil and groundwater has not been investigated to determine extent of contamination in the area. RCRA SWMUs in this area need to be investigated and cleaned, or documentation provided, along with methodology that such has been satisfactorily performed.	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions. A surface soil sampling program will also be included in the Supplemental RI Work Plan. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	A site-wide ground water sampling program was implemented as part of the 1999 SRI. Soil/source area sampling is discussed in Sections 2.1 and 3.2.

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	Supplemental RI			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
145	p. 21	Dioxin and furan sampling should be conducted in the area of the former liquid waste incinerator, and at other areas as may be appropriate.	As discussed previously, based on a review of historical information at the plant site, combustion related operations were primarily related to an on-site incinerator and boiler. As is typical of boilers or incinerators, these operations may have resulted in the formation of CDD or CDF congeners. Incineration of PCBs primarily results in the formation of CDFs rather than CDDs; the potential yield of CDFs depend on the specific conditions in the incineration operations. It is important to recognize that CDDs /CDFs are formed as a result of almost all common incineration/combustion processes, and are ubiquitous in soils and other environmental media, particularly in industrialized areas. Therefore, if CDD / CDF concentrations are detected in plant soils, attribution of these levels to specific heat related operations at the plant would be difficult in light of the levels which are expected to occur due to other common and widespread anthropogenic sources. Based on these considerations, it is our opinion that the project should not focus on CDD/CDFs to evaluate the nature and extent of contamination at the plant site.	Dioxin data was collected in the vicinity of the former on-site incinerator during the SRI.
146	p. 21	Southeast property: Documentation of proper closure and removal of the fuel oil tanks is to be provided. The general storage pad area has not been investigated regarding surface soil contamination. Recent groundwater data has not been provided to confirm current levels of contamination in this area.	Documentation of closure/removal of the two 50,000 gallon fuel oil tanks formerly adjacent to the Powerhouse will be provided. A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions. A surface soil sampling program will also be included in the Supplemental RI Work Plan.	Exhibit F

	Supplemental RI			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
147	p. 21	Southwest property: The Mold Storage Building (A RCRA SWMU) has not been satisfactorily investigated to determine presence of contamination in the area and in soil around the area. Groundwater is known to be contaminated. The extent of such contamination, or the source has not been documented.	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	A site-wide ground water sampling program was implemented as part of the 1999 SRI. Soil/source area sampling is discussed in Sections 2.1 and 3.2.
148	p. 21	Former Thinner Tank Area: The extent of the BTEX plume has not been determined (i.e. beneath the building). Contamination potentially present in the soil and groundwater in the area of the switch house and transformers has not been determined.	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions. GM would like to discuss approaches to soil/source area sampling with NYSDEC at the upcoming meeting, and develop the Supplemental Work Plan based on the conclusions of the meeting.	A site-wide ground water sampling program was implemented as part of the 1999 SRI. Soil/source area sampling is discussed in Sections 2.1 and 3.2.
149	p. 21-22	Ley Creek Deferred Media: The sediments and surface water of this area have not been adequately investigated to determine the nature and extent of contamination and impacts. The sediments need to be analyzed for all site-related contaminants in depositional areas. Surface water samples need to be collected upstream and downstream of the site and analyzed for all site-related contaminants to determine ongoing impacts from the facility and groundwater.	A sampling program and rationale for the Ley Creek Deferred Media will be presented in the Supplemental RI Work Plan.	Ley Creek sediment and surface water was investigated as part of the 1998 and 1999 SRI.

RACER0060939

	Supplemental RI			
	March 13, 1998 (1) Letter Reference Page	March 13, 1998 NYSDEC Comment (1)	May 18, 1998 Response/Considerations (2)	Revision location in SRI Report
150	p. 22	General Groundwater issue: It is evident that the vertical extent of groundwater contamination has not been determined at the site. Groundwater flow within the glacial till will need to be addressed unless it can be demonstrated, with the available data, that groundwater contamination does not exist within that unit.	The potential for vertical migration of ground water contamination will be addressed in the Supplemental RI Work Plan.	A site-wide ground water sampling program was implemented as part of the 1999 SRI. Soil/source area sampling is discussed in Sections 2.1 and 3.2.
151	p. 23	Data: In addition to that referenced above, all of the groundwater quality data will need to be reviewed and additional sampling planned to ensure that adequate analytical results (VOCS, SVOCS, PCBs/Pesticides, Inorganics) for site wide groundwater are evaluated in the Supplemental RI report. For example, Figure 3-10 indicates that PCB analyses have not been performed on groundwater samples collected from the area of the IWT Plant and PCBs were analyzed for in only one of the groundwater samples collected from the area of the Administration Building. Since it is possible that PCBs are present in the groundwater in these areas, such analyses will need to be incorporated in the Supplemental RI work plan. As a related comment, additional groundwater sampling will need to be performed to assess the appropriateness of wells U-1S, U-1D, and U-2 as background wells.	A site-wide ground water sampling program will be presented in the Supplemental RI Work Plan to collect current data with respect to ground water conditions.	A site-wide ground water sampling program was implemented as part of the 1999 SRI.
152	p. 23	All of the available data will need to be reviewed and additional sampling performed, to ensure that the Supplemental RI adequately addresses the potential for subsurface utilities (and their associated backfill materials) to behave as potential contaminant migration pathways.	The evaluation of subsurface utilities as a potential migration pathway will be evaluated during the Supplemental RI.	SRI included investigation of sump line 5, sump line 1, the fire protection line, and the various oil/water sumps in manufacturing building.

Notes:

(1) March 13, 1998 letter from Sue Benjamin (NYSDEC) to James Hartnett (GM) regarding NYSDEC review of the RI/FS Report - Former IFG Facility and Ley Creek Deferred Media Report, dated October 1997.

(2) May 18, 1998 letter from James Hartnett (GM) to William Daigle (NYSDEC) regarding GM's responses to NYSDEC's March 13, 1998 comments.

Attachment 1
GM Response to NYSDEC Comments on Preliminary RI/FS Report
Order on Consent Index # D-7-0001-97-06

Depth of Hydraulic Oil Sumps and Tanks

Sump Designation	Location (Bay)	Depth (1) (ft)
A	K-20	8.25
B	K-13	7.67
C	K-6	NA
D	K-4	8.25
E	I-19	7.67
F	H-11	7.67
G	G-3	8.25
H	F-13	7.67
I	G-3	7.67
J	C-7	12
K	B-6	7.67
L	CC-14	NA
M	I-13	NA

Tank Designation	Location (Bay)	Depth (2) (ft)
N	L-9	5.5
O	J-19	6
P	G-11	6.5
Q	D-6	6
R	H-6	6

Notes:
(1) Sump depths are measured from top of ground surface to bottom of the sump.
(2) Tank depths are measured from top of ground surface to bottom of the tank.
(3) Sumps were constructed of reinforced concrete with a 2 ft diameter manhole cover tapered to 5 ft diameter at the bottom. A rectangular concrete base was constructed below the sump. Gravel backfill was used below the concrete base.
(4) Tanks were constructed of steel.
NA - Not Available from historical drawings.

Attachment 2
GM Response to NYSDEC Comments on Preliminary RI/FS Report
Order on Consent Index # D-7-0001-97-06

Industrial Waste Treatment Plant Tank and Storage Facility Construction Materials

Items	#	Construction Material	Height (ft)	Width (ft)	Length (ft)	Area (ft^2)
Tanks						
Dirty Oil Tank	1	Steel				
Clean Oil Tank	1	Steel				
Caustic Tank	2	Steel				
Emulsifier System (mixer, tank)	2	Steel				
Filter Recycle Tanks	2	Steel				
Used Oil Tank	3	Steel				
Deionized Water Tank	2	Steel				
Polymer Tanks	4	Steel				
Former Virgin Oil Tanks	3	Steel				
Sludge Thickener Walls	8	Reinforced Concrete	12.0	1.0	25.0	
Sludge Thickener Floor Slab	2	Reinforced Concrete	2.0	25.0	25.0	
Sludge Thickener Sumps	2	Reinforced Concrete	3.0	1.0	4.0	
Clarifier Floor Slab	2	Reinforced Concrete	2.0			2830.0
Clarifier Walls	2	Reinforced Concrete	12.0			95.0
Wet Well Walls	6	Reinforced Concrete	12.0			9.7
Wet Well Floor Slab	6	Reinforced Concrete	1.0			38.0
Waste Oil Tank Walls	32	Reinforced Concrete	12.0	1.0	12.0	
Waste oil Tank Floor Slab	8	Reinforced Concrete	1.0	12.0	12.0	
Oil Removal Tank Walls	4	Reinforced Concrete	12.0	1.0	25.0	
Oil Removal Tank Floor Slab		Reinforced Concrete	1.0	25.0	25.0	
A/A Tank Walls	6	Reinforced Concrete	12.0	1.0	25.0	
A/A Tank Walls	6	Reinforced Concrete	12.0	1.0	15.0	
A/A Tank Floor Slab		Reinforced Concrete	1.0	15.0	25.0	
EQ Tank Walls	6	Reinforced Concrete	12.0	4.0	65.0	
EQ Tank Floor Slab		Reinforced Concrete	4.0	65.0	65.0	
Holding Tank Walls	4	Reinforced Concrete	12.0	1.0	25.0	
Holding Tank Floor Slab		Reinforced Concrete	2.0	25.0	25.0	
Sumps						
Clarifier Sumps	2	Reinforced Concrete				
Sludge Sumps	3	Reinforced Concrete				
Acid Alkali Sump #65	1	Reinforced Concrete				
Sump #62	1	Reinforced Concrete				
Filter Press Sump	1	Reinforced Concrete				
Subsurface Building Structures						
IWT Basement Slab		Reinforced Concrete	2.0			7200.0
IWT Basement Walls		Reinforced Concrete		0.7		3600.0
Footers	6	Reinforced Concrete	4.0			1.0

Attachment 3

GM Response to NYSDEC Comments on Preliminary RI/FS Report
Order on Consent Index # D-7-0001-97-06

Storm Sewer Modifications (1981-1988)

Due to an oil sheen observed in Ley Creek, which originated at the GM Syracuse Plant outfall "plant outfall"; combined flow from monitoring points Outfall 001 and 002), NYSDEC issued a Consent Order to GM on January 20, 1981. The Consent Order required investigations and actions to minimize the oil discharging to Ley Creek. As a result of GM's investigations, the following sources were found to contribute to the oil discharge into Ley Creek:

- Leakage from oil reclamation sumps within the manufacturing plant building
- Powerhouse sump overflow
- Administration parking lot drainage
- Industrial Waste Sump (also known as acid/alkali bunker/wastewater holding bunker)

Modifications to the above mentioned systems were conducted during the early 1980s and included the following:

- A temporary holding pond was installed in the northern portion of the site to observe, contain, and collect oil that may have discharged with storm water from Outfall 001. Previously, storm water, which contained oil from leaking reclamation sumps and Powerhouse sump overflow, discharged directly into the plant outfall. The temporary pond was equipped with an underflow weir to prevent flow around, an imbiber bead filter box at the outlet to capture oil sheen, and a brill skimmer to remove collected oil.
- The lagoon was revised to include a new underflow weir to prevent spill over during high flow conditions. Also, permanent type booms were installed to replace the absorbent booms in order to more adequately contain oil sheen. The newly installed booms were fitted into metal containment boxes with absorbent material to capture oil.
- To modify the underground concrete oil reclamation sumps, molder trenches tied into the sumps were temporarily plugged. Molder trenches were kept clean by utilizing portable vacuum units. The sumps were pumped free of oil, cleaned, and sand blasted. An epoxy liner was poured to minimize leaks in the sump's concrete.
- Modifications to the Powerhouse sump system included installing a submersible trash style pump capable of handling solids that had been plugging the former pump and causing overflow. The trash pump would discharge oils, fly ash, and other solids to the Industrial Waste Treatment (IWT) Plant. Also, an underflow baffle was installed such that overflow conditions would not allow floating oil or material to be discharged.
- Modifications to the Administration Building parking lot included rerouting an 18 inch storm sewer pipe that led from the parking lot to the plant outfall bypassing the lagoon and temporary holding pond. This line was found to discharge oil from a nearby leaking oil reclamation sump. The portion of the line leading to the outfall was cut and plugged with concrete. The portion from the parking lot was extended to lead into the temporary holding pond. New manholes and piping were installed in the lot and tied into the pipe leading to the temporary holding pond. Old pipe within the parking lot was plugged. Old manholes within

the parking lot were used for monitoring.

- Modifications to the industrial waste sump included the following: replacement of existing vertical water pump with submersible trash pump to better remove solids; installation of air agitation unit for keeping solids in suspension to allow more efficient pumping to the IWTP; installation of emergency pump; installation of float controls and monitor panels to inform maintenance of problems; disconnection of overflow pipe to storm sewer; plugging of pipe to lagoon; and installation of a lined bunker to collect overflow.
- A sewer junction chamber was installed just west of the temporary holding pond. Discharge piping from the temporary holding pond and the lagoon met at the sewer junction chamber prior to discharge to the Outfall.

In response to the 1985 Consent Order, GM hired W & W Facilities Group (a division of EDI) to provide engineering and construction services to further modify the storm sewer system. The following activities were conducted during the 1985-1986 sewer modification:

- Plugged the roof drains, leaders and underground storm sewer pipes associated with the east half of the manufacturing building.
- Installed new roof drains, leaders, and aboveground storm sewers to direct storm water to a north roof drain outfall just east of the industrial waste sump.
- Installed a new 24 inch storm sewer pipe (north roof drain outfall) to handle the roof drainage from the eastern portion of the manufacturing building. The north roof drain outfall was connected to a new storm sewer pipe (Administration Building parking lot storm sewer) that included the following new manholes and pipe sections (also refer to Figure 1-8):
  New manholes: BA7, BA6, BA5, BA4, BA3, BA2, BA1, B1
  New catch basins: BAC1, BAC2, BAA1
  Old manholes and catch basins tied into new storm sewer: BAE4, BAE3, BAE2 BAE2A, BAE1, BAE1A, BAF1, BAB1
  New reinforced concrete pipe sections: 30 inch from BA7 to BA4; 36 inch from BA4 to B1
- Two east roof drains were installed and connected to Manholes B7 and B9.
- Plugged old sewer lines that led from the Administration Building parking lot to the temporary holding pond.
- Installed a new sewer pipe from new manhole B4 to new manhole A1
  New manholes: B4, B3, B2, B1, A1
  New reinforced concrete pipe sections: 36 inch from B4 to B1; 42 inch from B1 to A1
- Installed a new sewer pipe from new manhole A2 to A1 with a 42 inch reinforced concrete pipe. This pipe was not used until the surface impoundment closure program in 1989.
- Installed new 42 inch reinforced concrete storm sewer pipe to and from old Manhole A1A, a new 36 inch wide trough, a 36 inch by 24 inch culvert under Factory Avenue, a 8 ft wide cmp trough, and a 6 ft wide ditch to Ley Creek.
- Oil/water collection sumps number 1 through number 8 were installed to collect oil in the abandoned underground storm sewers. Oil and water were pumped from the oil/water collection sumps to the IWTP via newly installed aboveground piping. Oil/water collection sumps 1, 2, 4, and 7 pump oil/water to the industrial waste sump prior to the IWT. Oil/water collection sumps 3, 5, and 6 bypass the industrial waste sump and go directly to the IWTP.

In 1987, O'Brien & Gere Engineers, Inc. conducted an investigation of the site storm sewer leading to Outfall

003. The investigation included sewer televising and visual inspection. It concluded that specific sewer sections required either cleaning, slip lining, or Insituform®. From 1987 to 1988, O'Brien & Gere Engineers, Inc. conducted storm sewer system modifications as part of the 1985 Consent Order issued by NYSDEC.

- The following sewer pipe sections were cleaned: from A13 to A12; from A12 to MHA11
- The following sewer pipe sections were slip lined: B11 to B10; B10 to B9; B9 to B8; B8 to B7; B8 to B7; B7 to B6; B6 to B5; B5 to B4; BB1 to B5; AC1 to A4
- The following sewer pipe sections were in situ formed: A4 to A3
- Plugged roof drains, leaders, and underground storm sewer pipes associated with the western side of the manufacturing building.
- Installed new roof drains and aboveground sewer pipes that would service the western side of the manufacturing building and the new warehouse.
- Installed a new storm sewer pipe along the western side of the manufacturing building that had two connections for roof drainage at new Manhole A5 and old Manhole AB1.
  New manholes: A8A, A8, A9, A10, A7, A6, A5, A4, A11, A12.
  Old manholes and catch basins tied into new storm sewer: A8B, AG2, AG1, AF2, AF1, MHA11, AH1A, AH2A, A13, AH3, AJ1, AE2, AE1, AD1, AB1
- New pipe sections: 24 inch reinforced concrete from A8A to A8 to A7 to A6 to A5; 36 inch reinforced concrete from A5 to A4; 12 inch reinforced concrete from A12 to A11 to A10 and old catch basin AF1 to A10; 15 inch from A10 to A9 to A8.
- The old storm sewer pipe along the western side of the manufacturing building was plugged. The pipe from the Mold Storage Building to the old western storm sewer pipe was rerouted such that it tied into the new sewer pipe.

Attachment 4
GM Response to NYSDEC Comments on Preliminary RI/FS Report
Order on Consent Index # D-7-0001-97-06

Decommissioning Information

- 1995 Facility Assessment Data Collection

  Analytical data which could be provided to NYSDEC is summarized below:

  - PCB and metal wipe sample data for floors, structural beams, and select sumps
  - PCB and metal dust sample data for floors and structural beams
  - PCB and metal sludge sample data for select sumps, stacks and piping
  - VOC sample data for the tank farm sump and the paint storage room floor
  - Asbestos survey

- 1998 Facility Assessment Addendum Data Collection

  Analytical data which could be provided to NYSDEC is summarized below:

  - PCB and metal wipe sample data for select walls and floors
  - PCB wipe sample data for transformer pad
  - PCB oil and water sample data for oil/water collection sumps
  - Additional asbestos survey

- Bid specification packages were developed separately from the GM standard cleaning specifications to assist in completion of cleanup projects

  - Cleanup Project #1 tasks included the following: deactivation of the còal pile area, decontamination of the coal silos, deactivation of a 300 gallon solvent tank and associated piping, flushing of facility process sewers, cleaning and permanent closure of a 12,000 gallon caustic tank, and decontamination of small areas of concrete floor (paint mix room, paint storage room, and at loading docks). Except for flushing of facility process sewers, the tasks for Cleanup Project #1 were completed. The Cleanup Project #1 documentation in the form of a bid specification (O'Brien & Gere, December 1995), confirmatory PCB wipe sampling analysis, and field notes is available.

  - Cleanup Project #2 tasks included surface decontamination for the removal of dust, oil and grime from approximately 750,000 sq. ft. of concrete floor and above floor (structural steel, ductwork, piping, walls, etc.) surfaces within the main manufacturing building. Cleanup Project #2 is currently on hold. Decontamination has been completed on 30% of the above floor surfaces and 10% of the concrete floor surfaces. The Cleanup Project #2 documentation in the form of bid specification (O'Brien & Gere, July 1996), confirmatory PCB wipe sampling analysis, and field notes is available.

- Cleanup Project #3 tasks include removal of several hundred linear feet of process oil piping, deactivation of the oil reclamation system including the storage tanks, deactivation of the emulsion filtering and transfer system, decommissioning of the paint mix room including mixing vessels, cleaning of the powerhouse floor drains and associated piping, demolition of the fly ash hopper, decontamination of the mold storage building, and decontamination of the glycol pumping station. Cleanup Project #3 has not yet been initiated. Documentation for Cleanup Project #3 includes the bid specification (O'Brien & Gere, 1997).

- Cleanup Project #4 task included removal of a 3750 kVA transformer from site. Based on previous sampling and analysis, PCBs were detected in the transformer greater than 50 ppm but less than 500 ppm. In February 1998, the transformer was removed from site and disposed of at the TSCA permitted Laidlaw facility in Utah. Documentation for Cleanup Project #4 includes the disposal manifests.